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OFFICE OF TECHNICAL SERVICES
WASHINGTON 25, D. C.

TECHNICAL TRANSLATIONS

U.S. DEPARTMENT OF COMMERCE
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BUSINESS AND DEFENSE SERVICES ADMINISTRATION
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Descriptors marked with an asterisk are included in the subject index.

BIBLIOGRAPHY

Library of Congress, Washington, D. C.
MONTHLY INDEX OF RUSSIAN ACCESSIONS.
Feb 62, 325p.
Order from GPO $12.00/year

This index is a record of the publications in languages spoken in the Soviet Union currently received by the Library of Congress and a group of cooperating libraries. It consists of three parts: Part A lists monographic literature published after 1944, with the title in the original language preceded by its English translation; Part B lists periodicals published after 1946; Part C constitutes a subject guide to both the monographs and periodical articles listed in Parts A and B.

Office of Technical Services, Dept. of Commerce, Washington, D. C.
JAPANESE SCIENCE AND TECHNOLOGY. July 61, 37p. 703 refs. OTS Selective Bibliography SB-477.

DESCRIPTORS: Biology, *Science, Behavior, Chemistry, Chemical engineering, Earth, Engineering, Food, Fishes, Agriculture, Machines, Materials, Metallurgy, Physics, Mathematics, Patents, Translations, Japan, *Bibliography.

Lists 703 references added to the OTS collection during the period January 1959-July 1961. Reports are listed in the following categories: biological and behavioral sciences; chemistry; chemical engineering; earth sciences; engineering; food, fish and agriculture; machinery; materials; metallurgy; physics and mathematics, patents. These translations cover a vast body of research done in Japan and is the first compilation of this type for this country.

AGRICULTURE

UTILIZATION OF A VACUUM WELL IN IRRIGATION. 31 Oct 61 [8]p. JPRS: 10970.
Order from OTS or SLA $1.10 62-13435

Trans. of Shui Wen Ti Chih Kung Ch'eng Ti Chih (Chinese People's Republic) 1960, no. 1, p. 21-22.

DESCRIPTORS: *Irrigation systems, *Water supplies, Vacuum pumps, China, Hydrology.

Kalashnikov, A. F.
THE EFFECT OF FIELD PROTECTIVE FOREST STRIPS ON SOIL MOISTURE AND WINTER WHEAT YIELDS (Vliyanie Polezashchitnykh Lesnykh Polos na Vlazhnost' Pochvy i Urozhai Ozimoi Pshenitsy). [Jan 62] 8p. PL-480 Agr.
Order from OTS $0.50 60-21886

Trans. of Agrobiologiya (USSR) 1952, no. 6, p. 123-130.

DESCRIPTORS: *Forestry, *Soils, *Moisture, *Wheat, Growth, Production.

Data are presented on the yield and soil moisture of fields protected by forest strips in the Sovkhoz (State farm) "Gigant" and in the Stalin Kolkhoz (collective farm) of the Rostov district. The forest strips play an outstanding role in yield improvement by favorably changing the microclimate, the moisture regime, and the nutrients in the soil.

Kramorov, Yu.
A NEW CONTRIBUTION TO ELECTRICAL SHEARING (Novoe v Elektrostrizhke Ovets). [Jan 62] 6p. PL-480 Agr.
Order from OTS $0.50 60-51038

Trans. of Tekhnika v Sel'skom Khozyaistve (USSR) 1960 [v. 20, no. 1] p. 32-34.

DESCRIPTORS: *Electric machinery, Machines, Design, Production, Induction motors, Effectiveness Animals.
The manufacture of sheep-shearing machines with built-in induction motors has recently begun by Soviet industry.

Plant Cultivation

Bourrier, J. and Grauby, A.
UTILIZATION OF A VERGIÈRE SAMPLE FOR THE STUDY OF THE POSSIBLE CONTAMINATION OF LOCAL SOILS BY RADIOELEMENTS Progress rept. no. 2. [1960] 44p.
Order from OTS or SLA $4.60 AEC-tr-3953

Trans. of mono. (rept.) pub. by Commissariat a l'Energie Atomique (France) 1959, 20 Oct.

DESCRIPTORS: *Soils, Sampling, *Radiological contamination, Contamination, Moisture, Autoradiography, Terrain.

Galakhov, P. N.
NEW INSECTICIDES AND THEIR EFFECTIVENESS [Novye Insektisidy i Ikh Effektivnost']. 6 Nov 61 [9]p. JPRS: 11007.
Order from OTS or SLA $1.10 62-13442

Trans. of Zaschita Rastenii ot Vreditelei i Boleznei (USSR) 1960 [v. 5] no. 10, p. 30-33.
Another trans. is available from LC or SLA mi$2.40, ph$3.30 as 61-15832, 9 Jan 61, 11p.

DESCRIPTORS: *Insecticides, Effectiveness, Agriculture, Plants, Chemical analysis.

For abstract see Technical Translations 5: 391, 1961.

Pravdin, L. F.
THE PRESENT STATE OF TREE SELECTION AND SEED-GROWING AND METHODS FOR THEIR DEVELOPMENT (Sovremennoe Sostoyanie i Puti Razvitiya Selektsii Drevesnykh Porod i Lesnogo Semenovedenia). [Jan 62] 42p. 136 refs. PL-480 Agr.
Order from OTS $0.50 60-21910

Trans. of Akademiya Nauk SSSR. Institut Lesa. Trudy, 1951, v. 8, p. 5-35.

DESCRIPTORS: *Trees, Selection, *Seeds, Growth, Genetics, Production.

Yudin, M. I.
THE INFLUENCE OF FOREST BELTS ON THE TURBULENT EXCHANGE AND THE OPTIMAL WIDTH OF THE BELTS (Vliyanie Lesnykh Polos na Turbulentnyi Obmen i Optimal'naya Shirina Polos). [Jan 62] 4p. 6 refs. PL-480 Agr.
Order from OTS $0.50 60-21884

Trans. of Akademiya Nauk SSSR. Doklady, 1950, v. 71 no. 4, p. 655-658.

DESCRIPTORS: *Forestry, *Trees, Growth, *Wind, Velocity, Aerodynamics, Turbulent flow, Climatic factors, Plants.

Any forest belt has a double effect on air currents flowing over it: it acts simultaneously as a diffuser and as an eddy producer. For the optimal width of the belt, the wind velocity after the passage through the belt, should be 0.6 of the wind velocity in the open.

ASTRONOMY
Astrophysics

Barabashov, N. P.
STRUCTURE OF THE MOON'S SURFACE AND A STUDY OF THE FIRST PHOTOGRAPHS OF THE OTHER SIDE OF THE MOON (Struktura Poverkhnosti Luny i Issledovanie Pervykh Fotografii Ee Obratnoi Storony). 25 Jan 62, 6p. 19 refs.
Order from STS $7.80 STS Trans #16

Trans. of Iskusstvennye Sputniki Zemli (USSR) 1961, v. 9, p. 56-61.

DESCRIPTORS: *Moon, Exploration, Photography, *Satellite vehicle research, Lunar probes.

Breido, I. I., Markelova, A. A., and Schegolev, D. E.
A CLARIFICATION OF KNOWN OBJECTS ON THE OTHER SIDE OF THE MOON ACCORDING TO THE FIRST PHOTOGRAPHS (Vyyavlenie Dostovernykh Obbektov na Obratnoi Storone Luny po Ee Pervym Fotografeyam). 21 Jan 62, 11p. 3 refs.
Order from STS $10.65 STS Trans #14

Trans. of Iskusstvennye Sputniki Zemli (USSR) 1961, v. 9, p. 30-40.

DESCRIPTORS: *Moon, Exploration, Photography, *Satellite vehicle research, Lunar probes

Dragun, G. S., Kurnosova, L. V. and others.
APPARATUS FOR STUDYING NUCLEAR COMPONENTS OF COSMIC RAYS ON COSMIC ROCKETS AND ARTIFICIAL EARTH SATELLITES (Apparatura dlya Issledovaniya Yadernoi Komponenty Kosmicheskikh Luchei na Kosmicheskikh Raketakh i Isz). 29 Jan 62, 24p. 7 refs.
Order from STS $21.60 STS Trans. #19

Trans. of Iskusstvennye Sputniki Zemli (USSR) 1961, v. 9, p. 86-110.

DESCRIPTORS: *Satellite vehicle research, *Rocket research, *Cosmic rays, Nuclei, Detection, Instrumentation.

Markov, A. V.
DETERMINING THE STRUCTURE AND COMPOSITION OF DETAILS ON THE OTHER SIDE OF THE MOON ACCORDING TO PHOTOGRAPHS AT SMALL PHASE ANGLES (Ob Opredelenii Struktury i Stroeniya Detalei Obratnoi Storony Luny po Snimkam pri Malykh Uglakh Fazy). 23 Jan 62, 10p. 4 refs.
Order from STS $10.60 STS Trans #15

Trans. of Iskusstvennye Sputniki Zemli (USSR) 1961, v. 9, p. 41-47.

DESCRIPTORS: *Moon, Exploration, Photography, *Satellite vehicle research, Lunar probes.

Papkov, S. F., Pisarenko, N. F. and others.
RADIOMETRIC APPARATUS ON THE SECOND SOVIET COSMIC SPACECRAFT (Radiometricheskaya Apparatura na Vtorom Sovetskom Kosmicheskom Korable-Sputnike). 27 Jan 62, 8p. 1 ref.
Order from STS $10.90 STS Trans #18

Trans. of Iskusstvennye Sputniki Zemli (USSR) 1961, v. 9, p. 78-85.

DESCRIPTORS: *Satellite vehicle research, *Spaceships, Instrumentation, *Radiometers, Tests, Cosmic rays.

Sabenko, I. A., Pisarenko, N. F., and Shabrin, P. I.
DOSIMETRIC MEASUREMENTS ON THE SECOND SOVIET COSMIC SPACECRAFT (Dozimetricheskie Izmereniya na Vtorom Sovetskom Kosmicheskom Korable-Sputnike). 2 Jan 62, 7p. 10 refs.
Order from STS $9.10 STS Trans #17

Trans. of Iskusstvennye Sputniki Zemli (USSR) 1961, v. 9, p. 71-77.

DESCRIPTORS: *Satellite vehicle research, *Spaceships, Instrumentation, Dosimeters, Tests, *Cosmic rays.

Vitkevich, V. V., Kuz'min, A. D. and others.
RESULTS OF RADIOASTRONOMICAL OBSERVATIONS OF SOVIET COSMIC ROCKETS, tr. by B. W. Kuvshinoff. 26 Dec 61, 10p. 7 refs.
APL/JHU TG 230-T266.
Order from OTS $0.50 62-11136

Trans. of Iskusstvennye Sputniki Zemli (USSR) 1961, v. 7, p. 23-31.

DESCRIPTORS: *Satellite vehicles, *Rockets, Tracking, Instrumentation, Radio interferometers, Interferometers, *Radio interference, Astronomy.

BEHAVIORAL SCIENCES

Dupuis, Heinrich, Preuschen, Reinhardt, and Schulte, Bernhard.
THE OPTIMAL CONSTRUCTION OF THE GAS PEDALS (Die Optimale Ausfuhrung des Gaspedales). [1961] [19]p.
Order from SLA $1.60 61-20425

Trans. of Landarbeit und Technik (West Germany) 1955, no. 20, p. 109-121.

DESCRIPTORS: *Accelerators, *Tractors, Foot, Resistance, Vibration, Absorption, Muscles, Physiology, Reaction time, *Motor vehicle operators.

Personnel and Training

WE HAVE PEOPLE CAPABLE OF TEACHING (NOTE ON OUTSTANDING PILOTS OF MOLDAVIA).
31 Mar 61 [3]p. MCL-859/1-2.
Order from OTS or SLA $1.10 61-27424

Unedited rough draft trans. of Grazhdanskaya Aviatsiya (USSR) 1960 [v. 17] no. 11, p. 20.

DESCRIPTORS: Helicopters, Landing fields, *Aviation personnel, *Pilots, *Instructors, Education.

Parfentiy Lakey earned the reputation of one of the leading Moldavian pilots. An excellent knowledge of helicopters, great practical experience and conscientious attitude toward the service advanced Comrade Lakey long ago into the ranks of outstanding pilots of the Moldavian aviation group, Here he started his flying career, and now he commands a helicopter flight. The pilots of his flight accomplish their missions in an exemplary fashion, and fly their helicopters skillfully. "We have people capable of teaching," say these pilots in reference to their commander. (Extract)

Monien, Otto.
FOREIGN LANGUAGE TRAINING IN THE ARMY AND NAVY OF THE GERMAN FEDERAL REPUBLIC (Fremdsprachenausbildung in der Bundeswehr) tr. by W. E. C. [1959] [14]p. H-3397.
Order from OTS or SLA ph$1.60 59-16950

Trans. of Truppenpraxis (West Germany) 1958, Sep, p. 651-654.

DESCRIPTORS: *Military personnel, Personnel, Army, Navy, *Language, Training, Germany.

There is usually coupled with the demand for a foreign language training the question "what is the best method of giving such training?", and it is always asserted that there is one. It is the method which will enable the student to acquire the linguistic knowledge desired in the "shortest" time. The demand for the "shortest time" stands only too often for the desire to acquire the language with "the least possible work". Foreign languages cannot be learned, especially by adults, without trouble or as a sort of game. A person who is seeking such a method is asking for the "Nuremberg funnel" (a mechanical method of instilling knowledge), and whoever recommends one is making a promise which he cannot keep and should not be taken seriously. If any method can be called the "best method", it is that of regular, concentrated work, accomplished resolutely and persistently in the knowledge that any neglect means retrogression and can be avoided only by constant practice. The saying "repetition is the mother of study" may not sound agreeable to many persons, but cannot be replaced by "technique" even today and must be adopted as the basis for a "sure method". Moreover, no generally applicable description of a sure method can be given. (Extracted)

Amosov, N. M. and Shkabara, E. A.
EXPERIENCE IN FORMULATING A DIAGNOSIS BY MEANS OF DIAGNOSTIC MACHINES. 3 Jan 62, 11p. 2 refs. JPRS: 11815.
Order from OTS $0.50 62-11093

Trans. of Eksperimental'naya Khirurgiya i Anesteziologiya (USSR) 1961 [v. 6] no. 4, p. 15-22.

DESCRIPTORS: *Diagnosis, *Medical equipment, Electronic equipment, *Digital computers, Computers, Design, Tests, Cybernetics.

Bustamante, José Angel.
CULTURAL FACTORS IN SCHIZOPHRENIC STATES (Los Factores Culturales en los Cuadros Esquizofrenicos) tr. by Paul V. DePorte. 16 Dec 59, 30p. 15 refs.
Order from OTS or SLA $2.60 60-13142

Trans. of Revista Médica Cubana, 1958, v. 69, no. 6, p. 248-262.

DESCRIPTORS: *Psychoses, *Culture, *Etiology, *Sociology, *Adjustment (Psychology), Reaction (Psychology), Stimulation, Mental diseases, Genetics, *Personality, *Behavior, *Psychiatry.

Macy, Paul T., comp.
PACIFIC SALMON LITERATURE: A PRELIMINARY LIST OF ENGLISH TRANSLATIONS. 20 Mar 61 [24]p. 138 refs.
Order from OTS or SLA $2.60 61-19923

DESCRIPTORS: *Salmon, Pacific ocean, *Literature.

Available translations are listed of papers (mainly Russian and Japanese) written between 1916 and 1960. The listing is alphabetical by author. The cataloging is standard and includes title of paper in English, foreign title (transliterated if necessary), descriptive notes, date of translation, translation note (name of journal in which article originally appeared, or other information telling what was translated), and order information. Many of the translations have been previously announced in Technical Translations A list of translations in process is also included.

Ryabov, Yu. V.
PREOPERATIVE PREPARATION OF PATIENTS WITH THYROTOXICOSIS (O Predoperatsionnoi Podgotovke Bol'nykh Tireotoksilozami). 13 Sep 61 [12]p. 19 refs. JPRS: 10138.
Order from OTS or SLA $1.60 61-28418

Trans. of Vestnik Khirurgii (USSR) 1961, v. 86, no. 6, p. 13-19.

DESCRIPTORS: *Cyclohexanes, Surgery, *Hyperthyroidism, *Thyroid gland, Pathology, Metabolism, *Blood transfusions, Endocrine gland, Ganglia, *Drugs, Age factors, Reserpine, Tranquilizing drugs, Rauwolfia compounds.

The ganglion-blocking agent, hexamethonium, is an effective agent for the preparation of patients with mild and moderate forms of thyrotoxicosis for operation. The combined method of preparation (transfusion of arterialized blood and hexamethonium) is indicated in cases of severe thyrotoxicosis. The use of these methods of preoperative preparation considerably improves the condition of the patients: there is a slowing of the pulse, a reduction in the basal metabolism, and an improvement in the antitoxic, protein, pigment and carbohydrate functions of the liver. The utilization of hexamethonium and arterialized blood presupposes the use of general tonic, sedative, hypnotic and cardiac agents as indicated. (Author)

Troshin, A. A.
SOME LINES OF CYTOLOGICAL INVESTIGATION IN THE USA (O Nekotorykh Napravleniyakh Tsitologicheskikh Issledovanii v SShA). [1961] 18p. 4 refs.
Order from OTS or SLA $1.60 61-20749

Trans. of Tsitologiya (USSR) 1961, v. 3, no. 4, p. 489-493.

DESCRIPTORS: *Histology, Scientific research, *Cells (Biology), Tissues (Biology), *Mitosis, Muscles, Electric potential.

Anatomy and Physiology

Minaev, P. F. and Chukhrova, A. I.
SEPARATION OF BRAIN PROTEINS VIA PAPER ELECTROPHORESIS. 14 Oct 61 [8]p. 13 refs. JPRS: 10443.
Order from OTS or SLA $1.10 61-28904

Trans. of Ukrayins'kyi Biokhimichnyi Zhurnal (USSR) 1961, v. 33, no. 3, p. 431-435.

DESCRIPTORS: *Brain, *Proteins, Separation, *Electrophoresis, Paper, Dogs.

A method is described which makes it possible to freeze rapidly and exsanguinate at the same time the brain of fairly large animals (dogs). The animal is immobilized on a wooden bench. Five to 10 ml of a 2% solution of novocaine is injected subcutaneously in the neck and muscles of the neck. Within 15 minutes after the injection, the jugular veins and common carotid arteries are exposed. In the right and left common carotid arteries glass canulas are inserted and connected by means of rubber tubules with a bottle containing a cooled and oxygen-saturated saccharose solution (0.25 M) or a physiological solution. The solution is passed through the common carotid arteries. Prior to injecting the solution, both jugular veins are opened. Within 2 or 3 minutes after the start of injecting, the thorax is opened, the aorta cut, and the injection of the solution continued for 2 or 3 minutes. Cooling of the brain (to 0° C) can be achieved by putting a bag of dry ice under the animal's head. Following irrigation, the cranium of the animal is opened, the brain removed, frozen with dry ice or liquid air, and examined.

Tatarynov, E. O.
CONCERNING THE PERMEABILITY OF CONNECTIVE TISSUE. 26 Oct 61 [19]p. JPRS: 10647
Order from OTS or SLA $1.60 62-13028

Trans. of Fiziologichnyi Zhurnal (USSR) 1961, v. 7, no. 3, p. 352-361.

DESCRIPTORS: *Tissues (Biology), *Histology, *Cells (Biology), *Blood vessels, Pathology, Nervous system, Endocrine glands, Secretion, *Permeability, Bacteria, Antigens.

Yuganov, E. M., Gurovskii, N. N. and others.
SENSORY REACTIONS AND THE STATE OF VOLUNTARY MOVEMENTS OF MAN UNDER CONDITIONS OF WEIGHTLESSNESS. 31 Jan 62, 24p. 13 refs. JPRS: 12231.
Order from OTS $0.75 62-11129

Trans. of Akademiya Nauk SSSR. Izvestiya, Seriya Biologicheskaya, 1961, [v. 26] no. 6, p. 897-903.

DESCRIPTORS: Man, *Weightlessness, *Physiology, Sensory perception, *Motor reactions, Reflexes, Reaction (Psychology), Space flight.

In a majority of cases among healthy persons no adverse sensory reactions occur under conditions of weightlessness. In the initial period of weightlessness a reduction is noticed in man's precision of movements and some increase in time required for the performance of motor acts. Changes in voluntary movements in the period of weightlessness are negligible and are of a transitory character; with repeated effects of weightlessness disturbances become less pronounced or disappear. Simple motor reactions in the case of a person in a fixed position can be performed under conditions of weightlessness sufficiently rapidly and precisely. (Author)

Biochemistry

Goldovskii, A. M.
SOME PERIODICITY IN THE CHEMICAL STRUCTURE OF PROTEINS. Communication 4 from Studies on Periodicities in the Chemical Structure of Substances in Organisms. [1961] 14p. 13 refs.
Order from OTS or SLA $1.60 61-19616

Trans. of mono. Pamyati Akademika N. A. Maksimova: Sbornik Statei, Moscow, 1957, p. 233-241.

DESCRIPTORS: *Proteins, Chemical analysis, Fractionation, *Periodic variations, Amino acids, *Plants, *Cells (Biology)

Ikeda, Ichiro.
EFFECT OF ACIDS AND ALKALI ON THE CEREBRAL CIRCULATION IN THE RABBIT, tr. by William Himel. 4 May 59, [25]p. (8 figs. omitted) 9 refs.
Order from OTS or SLA $2.60 59-16161

Trans. of Nihon Yakurigaku Zasshi (Japan) 1957, v. 53, no. 3, p. 340-347.

DESCRIPTORS: *Acids, *Alkali metal compounds, *Brain, *Blood circulation, Blood, *Hydrogen ion concentration, Blood pressure, Rabbits, Sodium compounds, Carbonates, Hydroxides, Ammonium radicals, Chlorides, Hydrochloric acid.

Four kinds of drugs which caused changes in the pH of the blood were injected (into the carotid artery or into the veins) into rabbits, the blood flow of the internal carotid artery was measured by the rotating manometer method, the blood pressure and respiration were recorded simultaneously, and the pH of the blood was measured by the glass electrode method. The following results were obtained in experiments in which more than a certain amount of these drugs were used. In dilute concentrations, HCl caused an increase in the cerebral blood flow (CBF) and a decrease in the cerebro-vascular resistance (CVR) and, at stronger concentrations (N/20 and above), it caused a decrease or cessation of the CBF and an increase in the CVR. NH_4Cl caused an increase in the CBF and, at the same time, a rise in the BP and a decrease in the CVR, and it stimulated the respiration. NaOH caused a decrease in the CBF and, at the same time, a drop in the BP. With injection i. v., there was no marked change in the CVR. With injection i. c. a., however, it caused an increase in the CVR. $NaHCO_3$ caused an increase in the CBF and a decrease in the CVR, and it stimulated the respiration. HCl and NH_4Cl injected i. v. (40 cc/kg.) lowered the pH of the blood, and NaOH and $NaHCO_3$ raised the pH. (Author)

Medvedev, Zh. A.
AGING OF THE ORGANISM AT THE MOLECULAR LEVEL (Starenie Organizma na Molekulyarnom Urovne). Supplemented and corrected version of a paper read at the International Congress on Gerontology (no. 5) held in the U. S. Aug 60. 22 Nov 61, 25p. NIH no. 11-24-61.
Order from OTS or SLA $2.60 62-13596

Trans. of #Uspekhi Sovremennoi Biologii (USSR) 1961, v. 51, no. 3, p. 299-314.
Another trans. is available from OTS or SLA $4.60 as 61-28863, JPRS-10707, 24 Oct 61 [46]p.

DESCRIPTORS: Age, Age factors, *Aging, *Proteins, *Nucleic acids, Molecular structure, Biochemistry, Synthesis, Mutations, *Metabolism, *Tissues (Biology).
Aging is discussed from the viewpoint that individual mortality, which provides for a rapid succession of generations of a given animal or plant species, is an indispensable condition for the evolution of the living order, and that therefore, during the process of evolution, various forms of mortality arise--either a rapid mortality, occurring immediately after reproduction, or a slow mortality, as a result of a gradual aging and devitalization in an organism that loses its resistance to adverse factors (disease, environmental conditions, predators, etc.). Data and theoretical considerations pertaining to the nature and causes of age changes in proteins and nucleic acids are reviewed under the following headings: (1) Character of age changes of proteins and nucleic acids; (2) The possibility of mistakes during the reproduction of the specific nature of proteins and nucleic acids; (3) Theories of the molecular aging of an organism; (4)

Factors of molecular variability; (5) The accumulation of molecular changes and the problem of aging; and (6) The possibilities of controlling the rate of accumulated molecular changes. (See also 61-21344, 61-23983)

Nordal, Arnold.
HEPTOSES: A NEW AND FUNDAMENTAL FACTOR IN PLANT AND ANIMAL METABOLISM (Sjuverdige Sukkerarter: Ein ny og Fundamental Faktor i Plante- og Dyremetabolismen) tr. by P. Pallamary. 25 May 59, 16p. (12 figs. omitted) 28 refs.
Order from OTS or SLA $1.60 59-16641

Trans. of Tidsskrift for Kjemi, Bergvesen og Metallurgi (Norway) 1956 [v. 16] no. 5, p. 77-82.

DESCRIPTORS: *Carbohydrates, *Heptoses, Biochemistry, Biosynthesis, *Photosynthesis, *Metabolism, *Plants, *Animals, Quantitative analysis.

Data are reviewed on heptoses in photosynthesis and heptoses as intermediate products in the breakdown of carbohydrates.

Opara-Kubinska, Z.
MODIFICATION OF THE STRUCTURE OF DESOXYRIBONUCLEIC ACID IN MICROORGANISMS. [1961] 9p.
Order from ATS $17.20 ATS-85N56P

Trans. of Postepy Biochem[ii] (Poland) 1961, v. 7, no. 2, p. 289-298.

DESCRIPTORS: *Nucleic acids, *Microorganisms, Molecular structure.

Palladin, A. V.
METABOLISM OF CEREBRUM DURING INHIBITION AND EXCITATION OF THE HIGHER NERVOUS ACTIVITY [Ob Obmene Veshchestv v Golovnom Mozge pri Tormozhenii i Vozbuzhdenii Vysshei Nervnoi Deyatel'nosti] tr. by Zelda D. Knowles. 12 Aug 53, 14p. (6 figs. omitted) 7 refs.
Order from OTS or SLA $1.60 61-28106

Trans. of Biokhimiya (USSR) 1952, v. 17, no. 4, p. 456-461.
Another trans. is available from SLA as RT-128.

DESCRIPTORS: *Brain, *Metabolism, Inhibition, Excitation, *Autonomic nervous system, Sleep, Nucleic acids, Cells (Biology), Exchange reactions, Physiology, Cerebral cortex.

Experiments revealed that during sleep metabolism does not abate; on the contrary, it proceeds actively; the activity of certain ferments is increased and, the content of the nucleic acids is not reduced, the expenditure of the carbohydrates is not reduced, and the content of the adenosine triphosphoric acid is increased. At the time of sleep the processes of synthesis predominate over the processes of breakdown, which also stipulates restoration of the efficiency of the brain. Various exciting substances have a different effect on the metabolism in the cerebrum and there are differences in the physiological effect during their use. The effect usually observed and expected from the use of one or another exciting substance may suddenly be lacking if at the moment of its use the condition of the brain or of the higher nervous activity is disturbed.

Rubin, A. B. and Antonov, A. S.
DO SPECIFIC TRAITS OF LIFE MANIFEST THEMSELVES ON THE MOLECULAR LEVEL? 25 Oct 61 [11]p. 3 refs. JPRS: 10716
Order from OTS or SLA $1.60 62-13261

Trans. of Nauchnye Doklady Vysshei Shkoly. Filosofskie Nauki (USSR) 1961, no. 3, p. 143-148.

DESCRIPTORS: *Biology, *Biochemistry, *Biophysics, *Molecules, *Motion, *Energy, Photosynthesis, Viruses, Nucleic acids, Proteins, *Metabolism, Neuromuscular transmission.

Data are reviewed showing that the specific nature of the biological form of motion of matter manifests itself ever on the molecular and supermolecular level, because the existence of a process in a living system occurs not isolatedly but in close metabolic interaction with other related metabolic processes. This places such a strong imprint on the substances participating in the process and on the course of its progress that the individual specific properties of the biological form of motion of matter manifest themselves even on the molecular and supermolecular levels.

Tsujimoto, Akira.
STUDIES ON NICOTINE METABOLISM. II. NICOTINE OXIDATION, tr. by William Himel. 24 Apr 59, 46p. (14 figs. omitted) 31 refs.
Order from OTS or SLA $4.60 59-14958

Trans. of Nihon Yakurigaku Zasshi (Japan) 1957, v. 53, no. 3, p. 553-565.

DESCRIPTORS: *Nicotine, *Metabolism, *Oxidation, Oxygen consumption, Laboratory animals, Mammals, *Respiration, Brain, *Liver, *Kidneys, Cytochemistry.

Through the investigation of the effects of nicotine and nicotinamide on cell respiration, nicotine oxidation by tissue homogenate was demonstrated by the manometric method. The livers and kidneys of dogs, pigs, and cats and the livers of rabbits, guinea pigs and horses revealed nicotine oxidation activity, but cows, rats and mice did not. The nicotine oxidation activity existed in the mitochondria of rabbit liver. Nornicotine oxidation was also demonstrated by rabbit liver. Using Ehrlich's aldehyde reaction, nicotyrine was colorimetrically estimated, and degradation of nicotyrine by rabbit liver and kidney was observed. The cyanogen bromide method was investigated using several derivatives related to nicotine. Thus, the process of nicotine metabolism was discussed. (Author)

Wallenfels, K. and Zarnitz, Marie-Louise.
CRYSTALLIZATION OF β-GALACTOSIDASE FROM ESCHERICHIA COLI (Kristallisation der β-Galaktosidase aus Escherichia Coli) tr. by H. Warfield. 29 Mar 60, 3p. 2 refs. MH No. 3-39-60
Order from OTS or SLA $1.10 60-15909

Trans. of Angew[andte] Chemie (West Germany) 1957, v. 69, no. 13/14, p. 482.

DESCRIPTORS: Crystallization, *Enzymes, Glycosides, *Carbohydrates, *Hexoses, *Escherichia

Botany

Barbarych, A. I. and Osychnyuk, V. V.
ACTIVITIES OF THE UKRAINIAN BOTANICAL SOCIETY IN 1960 (Pro Rabotu Ukrayins'kogo Botanichnogo Tovarystva v 1960 Rotsi). 13 Oct 61 [7]p. 10 refs. JPRS: 10478.
Order from OTS or SLA $1.10 61-28887

Trans. of Ukrayins'kyi Botanichnyi Zhurnal (USSR) 1961, v. 18, no. 3, p. 111-113.

DESCRIPTORS: *Plants, *Research program administration.

Kondrat'eva, N. V.
CYANOPHYTA FOUND IN SOME CULTIVATED SOILS NEAR KIEV (Sin'ozeleni Vodorosti Keyakikh Obroblyuvanykh Gruntiv z Okolyts'Kiyeva). Dec 61 [23]p. 35 refs. RTS 1952.
Order from OTS or SLA $2.60 62-13600

Trans. of Ukrayins'kyi Botanichnyi Zhurnal (USSR) 1959, v. 16, no. 1, p. 74-85.

DESCRIPTORS: *Algae, *Soils, *Nitrogen compounds, Biosynthesis, Classification, Identification.

Cyanophyta occupy an important place among the soil algae because of their ability of fixing the free atmospheric nitrogen. Cyanophyta are described which were found in 1953 to 1955, mainly by the method of soil-aquatic cultures, in the dark-grey podzolized and sod-meadow sand-loam cultivated soils near Kiev. The species found belong mostly to those widely spread in the soils of the U. S. S. R. (one of the causes of this phenomenon is usually the levelling effect of soil cultivation. As regards the composition and density of Cyanophyta the investigated soils were, as could be expected, more similar to the soils of the forest than to those of the desert zone.

Masyuk, N. P.
THE PROTOCOCCINEAE FLORA IN SOME PONDS OF WEST-UKRAINIAN POLESIE (Flora Protokokovykh Deyakykh Stavkiv Zakhidnoukraiins'kogo Polissya). Dec 61 [21]p. 12 refs. RTS 1953.
Order from OTS or SLA $2.60 62-13738

Trans. of Ukrayins'kyi Botanichnyi Zhurnal (USSR) 1959, v. 16, no. 1, p. 87-98.

DESCRIPTORS: *Algae, *Lakes, Ecology, Growth, Identification, Marine biology, Classification.

Peresvetov, A. S.
THE DISCOVERY OF PSILOPHYTES IN THE USSR. [1961] 16p. (8 figs. omitted).
Order from OTS or SLA $1.60 61-15958

Trans. of [Botanicheskii Zhurnal] (USSR) 1950, v. 35, no. 6, p. 647-655.

DESCRIPTORS: *Geology, *Plants, *Classification, Botany, Dendrochronology.

Sokolov, D. F.
INFLUENCE OF SOIL MOISTURE ON THE RATE OF CO_2 EVOLUTION DURING THE DECOMPOSITION OF FOREST LITTER (O Vliyanii Uvlazhneniya Pochv na Intensivnost Vydeleniya CO_2 pri Razlozhenii Lesnogo Opada). Dec 61 [7]p. 9 refs. RTS 2004.
Order from OTS or SLA $1.10 62-13924

Trans. of A[kademiya] N[auk] SSSR. D[oklady] 1954, v. 95, no. 6, p. 1317-1320.

DESCRIPTORS: *Soils, *Moisture, *Carbon dioxide, Production, Decomposition, Trees, *Forestry, Dioxides.

Vladimirova, K. S.
A NEW SPECIES OF BLUE-GREEN ALGA (Pro Novii Vid Sin'o-Zelenikh Vodorostei). Dec 61 [5]p. 6 refs. RTS 2005.
Order from OTS or SLA $1.10 62-13925

Trans. of Ukrayins'kyi Botanichnyi Zhurnal (USSR) 1961, v. 18 [no. 1] p. 96-98.

DESCRIPTORS: *Algae, Identification, *Lakes.

Microbiology

Raikov, I. B.
CHROMOSOMES IN THE MACRONUCLEUS OF THE HOLOTRICHOUS CILIATE NASSULA ORNATA EHRBG. (Khromosomy v Makronukleuse Ravnoresnichnoi Infuzorii Nassula Ornata Ehrbg.). Dec 61 [8]p 11 refs. RTS 1910.
Order from OTS or SLA $1.10 62-13732

Trans. of Tsitologiya (USSR) 1960, v. 2 [no. 5] p. 598-601.
Another trans. is available from OTS $3.00 in 61-21382, JPRS-7884, 1 Mar 61, 196p.

DESCRIPTORS: *Chromosomes, *Ciliata, *Mitosis, *Nuclei (Biology), Microbiology.

It is possible to demonstrate the presence of chromosomes in the macronucleus of N. ornata, and it is possible to show that they play an important part in

the endomitosis of each individual. These facts provide direct cytological evidence in favour of the theory that the ciliate macronucleus is a polypoid structure. (Author)

Zavarzin, A. A.
THE INTERRELATIONSHIP BETWEEN THE RATES OF PROTEIN AND NUCLEIC ACID TURNOVER AND MITOTIC ACTIVITY IN THE PROLIFERATION AND DIFFERENTIATION OF EPIDERMIS (Sootnoshenie Intensivnosti Belkovogo i Nukleinovogo Obmena i Mitoticheskoi Aktivnosti pri Proliferatsii i Differentsirovke Epidermisa). 21 Aug 61 [17]p. 9 refs.
JPRS: 9980.
Order from OTS or SLA $1.60 61-27753

Trans. of Arkhiv Anatomii, Gistologii i Embriologii (USSR) 1961, v. 40, no. 5, p. 18-26.

DESCRIPTORS: *Mitosis, *Proteins, Sulfonates, *Nucleic acids, Metabolism, *Cells (Biology) *Skin.

Experiments showed that complicated relations exist between multiplication of cells and metabolic rate (rate of synthesis) of sulfur-containing proteins and ribonucleic acid in the epidermis of rats.

Pathology

BURNS. 28 Nov 61 [54]p. 55 refs. JPRS: 11223.
Order from OTS or SLA $5.60 62-13352

Trans. of Bol'shaya Meditsinskaya Entsiklopediya (USSR) 1961, v. 21, p. 534-576.

DESCRIPTORS: *Burns, Diagnosis, *X-rays, Heat, Injuries, Chemicals, Battle injuries, Radiation injuries, Pediatrics, *Therapy, Bone, Accidents, Crime laboratories.

Contents:
Thermal burns, by A. A. Vishnevskii and M. Shraiber
Chemical burns, by S. Rusanov
Radiation burns, by V. Petushkov
Burns in war, by A. A. Vishnevskii and M. Shraiber
Burns in children, by A. Pugachev
X-ray diagnosis of changes in the bone in burns, by I. Lagunova
Burns in the forensic medical aspect, by I. Serebrennikov.

MILITARY-MEDICAL JOURNAL, 1961, NO. 5, 31 Aug 61 [164]p. JPRS: 10052.
Order from OTS or SLA $12.00 61-28519

Trans. of Voenno-Meditsinskii Zhurnal (USSR) 1961, no. 5, p. 2-97.

DESCRIPTORS: *Military medicine, *Space medicine, Astronautics, Medical personnel, Warfare, *Antibiotics, Therapy, *Fungus infections, *Anaphylaxis, *Penicillin, Toxicity, *Ticks, *Encephalitis, Atabrine, Antibodies, *Meningitis, *Salmonella infections, Aerosols, Immunization, *Typhoid, Digestive system, *Cholera, Bacteria, *Sensitivity, *X-rays, *Medical equipment, *Pressurized cabins, Decompression, *Ear, Pressure, Injuries, *Lungs, *Gas embolism, Literature, *Photographic equipment, *Radiation tolerance, Microbiology, *Libraries, Scientific organizations.

Contents:
From thought to reality
Comments of military medical personnel on human flight into space
Raise the level of prophylaxis of intestinal diseases among the troops
Methods of carrying out field exercises with company and battalion medical personnel, by V. A. Zhulin
Some problems of the method of special tactical exercises of the regimental medical service, by A. T. Rozhkov
Antibiotic therapy and drug sickness, by G. P. Rudnev
Moniliases, their prophylaxis and treatment, by N. S. Petrov
The prophylaxis and therapy of side-effects from antibiotic treatment under field hospital conditions, by V. M. Leshchenko
The so-called penicillin epilepsy in the clinic, by A. F. Panichev
Anaphylactic shock from the injection of penicillin, by A. A. Lobanov
Early clinical manifestations of tick-borne encephalitis, by A. N. Shapoval
The use of atabrine and encephalitis, by I. G. Sipeiko
Antiserum for tick-borne encephalitis, by N. N. Okhrimenko and others
The clinical aspects of serous meningitis, by N. N. Okhrimenko
Food toxoinfections and their prophylaxis, by K. S. Petrovskii
Development of a method of aerosol immunization against typhoid fever and dysentery, by N. I. Aleksandrov and others
Atypical course of dysentery, by S. V. Krakht and V. N. Kotsarev
Clinical characterization of Heidelberg salmonellosis in adults, by S. Ye. Karyuk and others
Group disease caused by the Salmonella Muenchen, by L. F. Grinshpun and P. I. Pertsovich
Case of severe food toxoinfection with a cholera-like course, by I. V. Martynov
Experience in the determination of sensitivity of microbes to antibiotics, by P. A. Borisov
The work of a mobile X-ray clinic, by V. M. Varlamov
Simple method of measuring fluid aerosol particles, by V. I. Somin and V. A. Pis'mennyi
Explosive decompression with loss of pressurization of the cabin, by N. P. Belyaev
Comparative evaluation of some methods of determining the pressure function of the ear, by P. I. Kalinin
A case of pronounced pressure trauma of the lungs and arterial gas embolism, by V. A. Myasnikov and G. V. Mashkov
Military medical press of the Soviet Union in the past and in the present, by A. A. Shibov
Compact protected X-ray apparatus and portable photographic laboratory, by A. I. Nesis
Bag of the physician on duty, by P. Ya. Kushch and E. M. Soshnik
Interinstitute Conference on Problems of Radiation Microbiology and Immunology (no. 2) by P. E. Kalmykov and others

Practical Scientific Conference of Physicians of the Moscow Garrison, by A. I. Khazanov
State Central Scientific Medical Library of the Ministry of Health USSR, by N. T. Kovalenko.

SOME CURRENT MEDICAL ACTIVITIES IN THE UKRAINE. 6 Oct 61 [21]p. JPRS: 10315.
Order from OTS or SLA $2.60 61-28728

Trans. of Vrachebnoe Delo (USSR) 1961, no. 1, p. 149-157.

DESCRIPTORS: *Public health, Nutrition, *Medical research.

Contents:
The institutes of the UkrSSR are working out the All-Union problem, "hygiene of the village"
Dissertations presented for defense in the medical institutes of the UkrSSR

VARIOUS ASPECTS OF INFECTIOUS DISEASE CONTROL IN THE USSR. 7 Aug 61 [80]p. 14 refs. JPRS: 9778.
Order from OTS or SLA $7.60 61-27690

Trans. of Akademiya Meditsinskikh Nauk SSSR. Vestnik, 1961, v. 16, no. 4, p. 3-29 and 59-78.

DESCRIPTORS: *Brucellosis, *Tularemia, *Malaria, *Epidemiology, Preventive medicine, *Antibodies, *Lymph, *Cells (Biology), *Diseases, Infections, Immunology.

Contents:
Certain results and further tasks in the eradication and prophylaxis of infectious diseases in the USSR, by V. D. Timakov
Cellular bases and neuro-humoral regulation of immunogenesis, by P. F. Zdrodovskii
The eradication of malaria in the USSR and characteristics of the path which has been taken, by P. G. Sergiev and others
Fundamental measures for decreasing the incidence of brucellosis, by P. A. Vershilova
The problem of the eradication of tularemia among humans in the USSR, by N. G. Olsuf'ev.

d'Avignon, Marcel and Gardeström, Linnéa.
CEREBRAL PALSY IN CHILDREN AND YOUNG PERSONS IN THE STOCKHOLM AREA; A MEDICAL AND SOCIAL INVESTIGATION (Cerebral Pares hos Barn och Ungdomar Inom Stockholmsområdet; en Medicinsk och Social Utredning) tr. by P. Pallamary. 28 Jan 60, 34p. 11 refs. NIH 1-28a-60.
Order from LC or SLA mi$3.00, ph$6.30 60-15075

Trans. of Nordisk Medicin (Sweden) 1958, v. 59, no. 2, p. 55-61.

DESCRIPTORS: *Nervous system, *Diseases, Cerebral cortex, *Brain, Etiology, Therapy, Training, Intelligence tests, Statistical data.

The management of cerebral palsy cases in the Stockholm area is briefly surveyed. The investigation comprised all cerebral palsy (c. p.) cases up to the age of 20 that could be traced in the area. In a population of 328, 300 referable to the 0-20 years age groups, 366 (402) cases were found, which figure points to an incidence of 1.2 c. p. children per thousand. Most cases, however, belonged to the 7 to 13 years age groups; and the incidence based on the number in those groups amounts to 1.6 c. p cases per thousand children of those ages. The type distribution of traumata showed pyramidal tract involvements in 80% (spastics) and other localizations in 20 per cent. Conceivable etiologies of the traumata are discussed in detail. Over 55% of the children had an I. Q. of 75 or more. The type distribution with respect to intelligence is outlined. The incidence of epilepsy slightly exceeded 30%; and it, too, is discussed with regard to different types of traumata. An attempt is made, by correlating the severity of the traumata with the I. Q., to evaluate the future prospects of earning a living. The prognosis in this respect is moderately good in 33% but very good in only 17% of the cases. The treatment and social service are discussed. The demands in this field are likely to increase further. (Author)

Ermakova, F. B.
MORPHOGENESIS OF LEUKEMIC CELLS IN THE FOCUS OF TRANSPLANTATION OF LEUKEMIA IN MICE (Morfogenez Leikoznykh Kletok v Ochage Perevivki Leikoza Myshei). 28 Aug 61 [14]p. 18 refs. JPRS: 9902.
Order from OTS or SLA $1.60 61-28056

Trans. of Arkhiv Patologii (USSR) 1961, v. 23, no. 6, p. 10-16.

DESCRIPTORS: *Transplantation, Mice, *Leukemia, *Cells (Biology), Leukocytes, Edema, *Genetics, Mitosis, Macrophages,

In the subcutaneous cellular tissue of the recipient, around the leukemic material transplant, a boundary membrane originates from the damaged fibers and elements of the discharged blood. Starting with the first day, the usual inflammatory reaction develops in the form of hyperemia, edema, and infiltration of leucocytes which abates toward the 3rd day. Activation of the connective tissue cells of the recipient starts toward the end of the 1st day following innoculation, in the form of accumulation of macrophages and light connective tissue cells around the circumference of the transplant on the outside of the boundary membrane and around the blood vessels. On the 2nd or 3rd day of innoculation, the transplant undergoes necrotization with subsequent resolution and incapsulation of the necrotic tissues. Toward the 3rd-4th day, at the site of the transplant a focus is formed in which three zones can be differentiated: the central zone of necrotized innoculated material; the zone of an inflammatory infiltration of leucocytes and macrophages with the beginning of incapsulation; the zone of proliferation of atypical cells which become differentiated into leukemic cells. The source of formation of leukemic cells are polypotent, so-called cambial connective tissue cells of the recipient. (Author)

Golubeva, N. A.
PROBLEM OF METABOLISM IN OPISTHORCHIS FELINEUS, tr. by William Himel. 7 Aug 50, 7p. 10 refs.
Order from OTS or SLA $1.10 61-28110

Trans. of Med[itsinskaya] Parazitol[ogiya] i Paraz-[itarnye] Bol[ezni] (USSR) 1945, v. 14 [no. 4]p. 45-48.

DESCRIPTORS: *Metabolism, Glycogen, Microorganisms, Liver, Parasites, Blood, Hemoglobin, Tissues (Biology), *Tapeworms, Secretion.

The absence of glycogen in the active tissues of Opisthorchis felineus (glycogen is found only in the ova, ovary and yolks) indicates the absence in it (0. f.) of an anoxiate form of respiration. Opisthorchis felineus as a liver parasite living in a medium practically devoid of oxygen, might belong to anaerobes. But the presence of glycogen in the active parts of the parasite's body indicates the presence in it of an oxiate form of respiration. The blood of the host-organism is a possible way for the entry of oxygen in Opisthorchis felineus.

Iodko, G.
IS THERE CONTROL OVER THE CONTROL INSTITUTE? (Est' li Kontrol' nad Kontrol'nym Institutom?). 31 Sep 61 [7]p. JPRS: 10199.
Order from OTS or SLA $1.10 61-28738

Trans. from Meditsinskii Rabotnik (USSR) 1961, v. 24, no. 43(1999) p. 3.

DESCRIPTORS: *Rabies, *Virus vaccines, Training, *Medical research, Public health.

Lifshits, S. G., compiler.
ONCOLOGY: RUSSIAN LITERATURE FOR 1958 (CONTINUED). [1961] 31p. 156 refs.
Order from OTS or SLA $3.60 62-13983

Trans. of #Vopr[osy] Onkol[ogii] (USSR) 1960, v. 6, no. 11, p. 118-124.

DESCRIPTORS: *Tumors, *Bibliography, Digestive system, Urinary tract, Reproductive system, Endocrine glands, Skin, Face, Mouth, Lymph, Bone, Joints (Physiology), Tissues (Biology), Ear, Nose, Eye, Neoplasms, Diagnosis.

Contents:
Mediastinum
Alimentary system
Urinary system
Male genital system
Female genital system
Endocrine system
Skin, face, lips
Lymphatic system
Locomotor system
Ear, nose and throat
Eye.

Mandel'shtam, A. B.
CHORIOCARCINOMA OF THE UTERUS (Khorionepitelioma Matki). 10 July 61, 20p. NIH no. 7-17-61.
Order from OTS or SLA $1.60 61-27745

Trans. of Sovetskaya Meditsina (USSR) 1959, v. 23 [no. 7] p. 54-62.

DESCRIPTORS: *Neoplasms, *Cancer, *Uterus, Cells (Biology), Diagnosis, Urine, Chemotherapeutic agents, Histological sections.

A survey.

Maruyama, Tokubi.
SERUM LIPIDS IN THE DIABETIC STATES WITH SPECIAL EMPHASIS ON LIPOPROTEINS. [1961] [46]p. 85 refs.
Order from SLA $4.60 61-18867

Trans. of [Nihon Naibumpi Gakkai Zasshi] (Japan) 1960, v. 36, no. 4, p. 499-518.

DESCRIPTORS: *Diabetes, *Lipoproteins, *Blood proteins, Cholesterol, Phospholipids, Lipids, Age, Diseases, *Circulatory system, Diagnosis.

The relationship between the blood levels of the serum lipids and vascular complications in diabetes mellitus was analyzed by comparing the differences in the liptoprotein (LP), the cholestrol (CH), and the phospholipid (PL) blood levels of 80 healthy subjects and 118 diabetic subjects, 28 of whom had vascular complications. These two groups were divided into an older and a younger group, with age 40 as the dividing age. An analysis revealed that the average α-LP was lower in both older groups. The dispersion of serum lipids was greater in the diabetics than in the healthy subjects. The β-LP was higher in the younger diabetics than in the older diabetics. Diabetics with disease complications (DC) had slightly higher serum lipid values than diabetics with no complications (DNC). The ratio of α-LP to total LP was significantly lower in the DC group than in the DNC group. Diabetics generally had an elevation of CH, PL, and β-LP. Within a month, diabetics treated with insulin showed a decrease in blood sugar and glucosuria, but the level of serum lipids did not reach normal until 3 months after initiation of treatment. It is concluded that in the control of diabetes the level of serum lipids is significant, particularly with vascular complications.

Pavlenko, S. M.
NEUROGENIC MECHANISMS OF SENSITIZATION. 26 Oct 61 [14]p. 13 refs. JPRS: 10642.
Order from OTS or SLA $1.60 62-13013

Trans of Fiziologichnyi Zhurnal (USSR) 1961, v. 7, no. 3, p. 417-423,

DESCRIPTORS: *Nervous system, *Sensitization, *Hypothalamus, Vagus nerve, Cerebral cortex, *Cybernetics.

To test the hypothesis that an antigen can be considered as a "code" and sensitization a process of information, arising from a code signal reaching the

organism from an antigen, the changes were recorded in the biocurrents of the cerebral cortex (EEG), the hypothalamus (EHG) and the vagus nerve (AVG) during sensitization of 25 rabbits with horse serum, and analyzed. Changes in the EEG began earlier, and were more marked than the changes in the EHG. The EVG did not show any change until after the second injection when the amplitude and wave frequency were increased. These findings demonstrate that (1) different levels of the nervous system participate in the sensitization process, (2) the roles of the cerebral cortex, the hypothalamus, and the vagus nerve are not equivalent, and (3) in sensitization, the hypothalamic region plays the basic role in processing, transmitting, and transforming information. These facts support the conclusion that the influence of antigen on the functional mobility of the stimulatory system of the organism may be analyzed according to the rules of cybernetics.

Rodrigues, Jayme, Cugolo, Elzira, and others.
HIRSUTISM. I. GENERAL REMARKS. CLINICAL AND HORMONAL STUDY OF 19 CASES (Hirsutismo. I. Consideracoes Gerais. Estudo Clinico e Hormonal de 19 Casos) tr. by P. DePorte. 12 Apr 60, 31p. (7 tables ref. omitted). NIH No. 4-9-60.
Order from OTS or SLA $3.60 order no. 60-17328

Trans. of Arq[uivos] Bras[ileiros de] Endocrin[ologia e] Metab[ologia] 1959, v. 8, no. 1, p. 1-28.

DESCRIPTORS: *Hair, Growth, Ovary, Adrenal glands, *Androgens, Therapy, *Estrogens, *Glucose tolerance, Steroids, Adrenal cortical extract, *Corticosteroids, Chromatographic analysis.

Nineteen patients with different grades of hirsutism were studied on clinical and hormonal grounds. Six cases were operated on and beside the bilaternal ovarie edge ressection a bilateral biopsy of the adrenals was performed. The following tests were made in each case: total 17 ketosteroids, dehydroepiandrosterone, chromatographic fractionation of 17 ketosteroids, pregnanedial, pregnanediol, 17 hydroxycorticoids, 11 oxysteroids, estrogens, glucose-insulin tolerance curve. At the moment no isolated dosage is capable of supplying an indication as to the aethiology of the process. The aethiology of the so called Stein-Leventhal syndrome probably consists in an adrenal hyperfunction of androgenic origin. The glucose-insulin curve only showed abnormality in the presence of a marked metabolic hyperfunction of the adrenals. The most common chromathographic alteration was the increase of fraction II, III, and VI + VII. (Author)

Undritsov, M. I. and Rozen, V. B.
EXPERIMENTAL MODELLING OF RHEUMATIC FEVER AND OTHER FORMS OF COLLAGEN DISEASES (Eksperimental'noe Modelirovanie Revmatizma i Drugikh Form Kollagenozov). 3 Nov 61 [13]p. 95 refs. JPRS: 10857.
Order from OTS or SLA $1.60 62-13313

Trans. of Patologicheskaya Fiziologiya i Eksperimental'naya Terapiya (USSR) 1961, v. 5, no. 4, p. 80-85.

DESCRIPTORS: *Rheumatic fever, *Collagen, *Diseases, Allergy, Arthritis, Endocrine glands, *Streptococcus infections, Toxicity, Antigens, *Viruses.

The attempts are summarized that have been made in the past 30 years to reproduce in animals the pathological changes characteristic of rheumatic fever and other collagen diseases. The experimental collagen diseases that have been produced are arbitrarily divided into five groups: (1) allergic, (2) infectious-allergic, (3) autoallergic, (4) endocrine, and (5) toxic. Most of this research has been confined to the reproduction of only one link in the pathogenesis of collagen diseases. This may be the reason that these experiments have not been adequate to human rheumatic diseases. The following areas of research are suggested: (1) the allergizing effect of streptococcal infection, (2) stimulation of autoimmune processes, (3) reproduction of disorders in neuro-hormonal regulation in the area of the hypothalamic-hypophyseal-suprarenal system, and (4) the prolonged effect of cold and other agents contributing to paraalergic reactions.

Yuvenskaya, N. P.
CHANGES IN THE OXIDO-REDUCTIVE POTENTIAL OF THE BLOOD IN EXPERIMENTAL BROWN-PIERCE CANCER AT VARIOUS STAGES OF DEVELOPMENT, tr. by H. Warfield. 25 Mar 53, 12p. (refs. 1 table omitted).
Order from OTS or SLA $1.60 61-28091

Trans. of Arkhiv Patologii (USSR) 1947, v. 9, no. 2, p. 59-64.

DESCRIPTORS: *Cancer, Rabbits, *Blood chemistry, *Oxidation-reduction reactions, *Blood, *Blood plasma, Blood pressure, Blood vessels.

The development of a tumor (Brown-Pierce cancer in rabbits) is accompanied by a drop of the redoxipotential (Eh) of the blood which is reflected in disturbed oxidative processes in the organism. The first drop of the Eh of the blood is observed from 11 to 13 days after the inoculation of the tumor, and equals from 15 to 20 mv. The tumor begins to proliferate intensely at the point of the inoculation between the 11th and 13th day. The longer the survival period of the animal, the greater the drop of the Eh in mv. The average length of the survival period of the cancerous animals equals 48 days. The drop of the Eh of the blood at the time of the animal's death equals 44.6 mv on the average, and is accompanied by an intense formation of metastases. The blood potential at the moment of the animal's death can drop to 38.8%. An acute inflammatory process inhibits the drop of the Eh. The liquidation of the inflammatory process results in a considerable lowering of the Eh, and the death of the cancerous animal which soon follows it. A gradual reduction of the inflammatory process results in a gradual drop of the Eh of the blood, and ends in the animal's death. An acute inflammatory process lengthens the life of the cancerous animal and inhibits the growth and metastasizing of the tumor. (Author)

Pharmacology and Toxicology

Belen'kii, M.
NITROFURANS AND THEIR USE IN MEDICINE. 23 Oct 61 [6]p. JPRS: 10796.
Order from OTS or SLA $1.10 62-13237

Trans. of Akademiya Nauk Latviiskoi SSR, Riga. Izvestiya, 1960, no. 5(154) p. 203-204.

DESCRIPTORS: *Nitrogen compounds, *Furan derivatives, Organic compounds, Oxygen compounds, Drugs, Handbooks, Medicine, Medical research, *Chemotherapeutic agents, Pharmocology, Bacterial toxins, Toxicity, Chemical reactions, Cells(Biology), Surgery, Urinary tract, Infections, Ophthalmology, Otorhinolaryngology.

It is very desirable to have a large revised printing of the monograph by A. F. Blyuger, "Nitrofurans and Their Use in Medicine," for the familiarization of practising physicians who want to know about this new class of medicinal substances, all the more since the first printing of the book has been rapidly distributed and there have not been enough copies to satisfy the demand of practising physicians. (Extract)

Dreyfuss, R.
THE PRACTICAL VALUE OF A NEW PSYCHO-SEDATIVE IN GENERAL MEDICINE. [1961] 12p. (3 figs. 1 diagr. refs. omitted)
Order from SLA $1.60 61-20664

Trans. of Praxis (Switzerland) 1961 [v. 50] no. 21, p. 548-552.

DESCRIPTORS: Therapy, *Psychoneuroses, *Drugs, Psychoses, Barbiturates, Anesthetics, *Tranquilizing drugs, Pharmacology, Alkoxy radicals, Phenoxy radicals, Methyl radicals, Medicine.

OM-518 or mephenoxalone, a product synthesized in 1957 by the technical department of the OM laboratories, is (o-methoxy-phenoxy-methyl)-5-oxazolidone-2. OM-518 was prescribed for a period of ten months, in general medical practice, for 57 patients, selected for the functional nature and the intricate character of their psychosomatic symptoms. Excluding psychotic maladies and severe psycho-neuroses, this medicament was tested in cases of psycho-affective unbalance of a constitutional or reactional origin, where there was a predomination of anxiety, psychic tension and muscular tension, and somatic conversion troubles. The good tolerance of the medicament, its great convenience, its uniform action as a psycho-sedative and muscle relaxer, as well as the absence of a hypnogenic effect or an inurement effect, made mephenoxalone a choice therapeutic medium for general medical practice, where the prompt elimination of the patient is an important condition in obtaining success in the treatment of many patients.

Hrdy, O. and Vesely, P.
SEPARATION OF TETRACYCLINE ANTIBIOTICS ON A CELLULOSE COLUMN. [1961] 9p.
Order from ATS $15.65 ATS-70N57C

Trans. of Ceskoslov[enska] Farm[acie] 1961, v. 10, no. 3, p. 126-130.

DESCRIPTORS: *Tetracyclines, *Antibiotics, Separation, Cellulose.

Shuster, Ya.
A COMPARATIVE STUDY OF THE ACTION OF SOME GANGLIONIC BLOCKING AGENTS UPON THE SYMPATHETIC AND PARASYMPATHEITC GANGLIA. [1961] [15]p. 52 refs.
Order from OTS or SLA $1.60 62-13290

Trans. of mono. Ganglioliyiki i Blokatory Nervnomyshchechnykh Sinapsov (Gangliolytics and Blocking Agents of Neuromuscular Synapses) Leningrad, 1958, p. 50-63.

DESCRIPTORS: *Autonomic nervous system, *Ganglia, *Vagus nerve, Drugs, *Hypertension, *Hypotension, *Tetrazenes, Nerves, Nervous system, *Neuromuscular transmission, Transmission.

The reaction of laboratory animals to pentapyrrolidinium, hexonium and 3 new compounds (p. 1, p. 2, and p. 3) of the bisammonium series were studied to compare their effects on the sympathetic and parasympathetic ganglion. The action of these drugs was compared to that of a commercial preparation of tetrathylammonium iodide (tetamon-I, TEA). Tests were conducted on the rectus muscle of a frog's stomach, the vagus nerve and the nictitating membrane of a cat's eye. All exhibited different activity with respect to various synapsis. The rectus muscle of the stomach was useless in quantitative comparison of the H-cholinolytic properties of the compounds. Parasympathetic ganglia are more sensitized to TEA than the sympathetic ones. The sympathetic ganglia are more sensitive than the parasympathetic ones to small doses of TEA and hexonium. The parasympathetic ganglia are more sensitive to larger doses. The sympathetic ganglia are more sensitive to the bisammonium bases with saturated quaternary nitrogen atoms in heterocyclic rings than the parasympathetic ones. These studies confirm the possibility of finding highly active ganglionic blocking agents that act preferentially on the sympathetic ganglia.

Radiobiology

RADIOBIOLOGY, 1961, VOL. 1, NO. 2. 8 Dec 61 [505]p. refs. JPRS: 11322.
Order from OTS or SLA $26.00 62-13655

Trans. of Radiobiologiya (USSR) 1961, v. 1, no. 2, p. 153-318.

DESCRIPTORS: *Radiobiology, *Polymerization, *Nucleic acids, *Gamma rays, *Radiation effects, Enzymes, *Free radicals, Ionization, *Molecular structure, *Liver, *Acetylochines, *Phospholipids, Carbon compounds, Monoxides, *Pyrimidines, Radiation tolerance, Myosin, *Nervous system, Radiation sickness, *Blood, *Metabolism, *Histamines, Pluronium, Rhythm, *Acid-base equilibrium, Intestine, *Mucous membranes, Oxygen consumption, Mitosis, *Eye, *Cysteine, Chlorides, *Glycines, Sodium compounds, Arsenates, Dosage, *Radio protective drugs, Mutations, X-rays, *Phosphorus, *Radioactive isotopes, Metabolic products.

Contents:

Investigation of changes in the polymerization spectrum of DNA upon irradiation in vivo and under the influence of DNAse action in vitro, by V. A. Struchkov and A. M. Kuzin.

Experimental study of the role of free radicals and of the direct effect in the primary mechanism of radiation action, by B. N. Sidorov and others

Effect of ionizing radiation upon the polymolecular structure of deoxyribonucleic acid in the living cell, by V. A. Struchkov and N. B. Strazhevskaya.

Study of the electrical characteristics of rat liver after radiation injury, by A. I. Polivoda and A. A. Mikhailova

Effects of acetylcholine upon restoration in vitro of phospholipids of the liver of rats subjected to gamma irradiation, by N. N. Demin and A. S. Kainova

On the endogenous formation of carbon monoxide, by V. V. Kustov and others

Decrease of thymine in DNA of pisum plantules irradiated with gamma rays, by V. I. Tokarskaya

On the radiosensitive links in the system of oxido-reduction enzymes of the cell associated with mitochondria, by N. A. Pomoshchnikova and T. S. Sokolova

Study of the properties of myosin of muscle tissue irradiated with Co^{60} in vitro, by V. V. Pal'min and L. T. Alekhina

Evolutionary complication of radiobiological aftereffects and the role of the nervous system in radiation sickness, by A. L. Shabadash

Effects of long-acting conditioned stimuli previously combined with X-ray irradiations upon the leukocyte and lymphocyte content in the peripheral blood, by N. N. Livshits and E. S. Meyzerov

Morphological changes in the central nervous system of dogs at the initial stages of chronic radiation sickness, by A. G. Khanin

Effects of small doses of ionizing radiation upon the processes of internal inhibition in dogs, by I. A. Piontkovskii and M. G. Ayrapetyants

Investigation of gas metabolism in irradiated animals performing muscular work, by I. V. Bondarenko

Changes of histaminopexic capacity of the blood in irradiated dogs, by K. M. Larionova

Dependence of the biological action of plutonium upon the rhythm of its entry into the organism, by Yu. I. Moskalev and others

Study of the state of the acid-base equilibrium in acute radiation sickness, by L. N. Mar'yich

Quantitative evaluation of radiation injury in crypts of the mucous membrane of the small intestine, by I. B. Smirnova

Antiradiative action of protective agents and the "bxygen effect", by E. Ya. Grayevski and M. M. Konstantinova

Effects of protective agents upon the mitotic activity of the corneal epithelium of irradiated mice, by O. P. Domareva

On the protective effect of cysteine hydrochloride upon radiation-induced deaminization of glycine in aqueous solutions, by N. A. Duzhenkova

Prophylactic effect of sodium arsenate in polonium poisoning, by D. I. Zelyakova

Rate and dose dependence of the formation of antimitotic substances in irradiated leaves of vicia faba, by A. M. Kuzin and L. M. Kryukova

Experimental mutations in spring wheat and their significance for selection, by P. K. Shkvarnikov and I. V. Chernyi

Comparative study of the mutagenic action of gamma rays and ethyleneimine, by N. S. Eiges and S. A. Valeva

Effect of X-ray irradiation of leaves upon their uptake of P^{32}, by S. O. Grebinskii and K. A. Skvarko

Mutagenic effect of metabolites formed in an irradiated plant, by L. M. Kryukova

International Symposium on Primary and initial processes occurring in living cells under the action upon them of ionizing radiation, by V. I. Tokarskaya

CHEMISTRY

JOURNAL OF GENERAL CHEMISTRY, 1941, VOL. 11, NO. 9: [TABLE OF CONTENTS] AND SELECTED ABSTRACTS. [1961] 5p. 10 refs.
Order from OTS or SLA $1.10 61-20371

Abstract trans. of Zhurnal Obshchei Khimii (USSR) 1941, v. 11, no. 9, p. #683-685, 707-712, 745-756. #A complete trans. is available from OTS or SLA $1.10 as 61-18071 [1961] 4p.

DESCRIPTORS: *Alcohols, Dehydrogenation, *Rhenium compounds, Chemistry, Abstracting, *Sulfides, *Catalysts, Esters, Acetyl radicals, Acetones, *Methyl radicals, Sulfates, Stilbenes, Chemical reactions, *Alkyl radicals, Phenols, Phenyl radicals, Amines.

Contents:

#Research on catalytic properties of rhenium. IX. Dehydrogenation of alcohols over rhenium disulfide, by M. S. Platonov

Effect of orthoformic ester on diacetyl and acetylacetone, by L. N. Parfent'ev and A. M. Mirzaev

Polymerizing action of dimethyl sulfate. II. Dimerization of a, a-diphenylethylene and the polymerizing action of some analogs of dimethyl sulfate, by V. N. Belov and B. M. Lebedev

Sulfonating action of dialkyl sulfates. I. Interaction of dimethyl sulfate with methyldiphenyl amine and triphenyl amine, by V. N. Belov.

REFERATIVNYI ZHURNAL. KHIMIYA (USSR) 1961, NO. 2, ABSTRACTS 2B242-2R164: SELECTED TRANSLATIONS OF ABSTRACTS OF ARTICLES BY CHINESE AUTHORS PERTAINING TO COMMUNIST CHINA (Soviet Abstracts, Chemistry). 30 Nov 61 [53]p. JPRS: 11208.
Order from OTS or SLA $5.60 62-13524

Complete translations of the Russian-language abstracts of articles originally published in the Sino-Soviet bloc.

DESCRIPTORS: *Chemistry, Abstracting, Periodicals, Translations, China, Inorganic substances, Organic compounds, Chemical analysis, Physical chemistry, Chemical engineering.

Palme, R. and Track, W.
NITRIDING BY INDUCTIVE HEATING IN AQUEOUS AMMONIA SOLUTION. Oct 61.
Order from BISI £ 5 15s BISI-2387

Trans. of Harterei-Technik und Warmebehandlung [sic] 1961, v. 7, Mar, p. 20-27.

DESCRIPTORS: *Induction heating, Ammonia, *Nitrogen, *Nitrides, Production

Analytical Chemistry

Darashkevich, M. L.
QUANTITIVE DETERMINATION OF ACETATE IONS IN SALTS OF ACETIC ACID BY CHROMATOGRAPHY. [1961] 3p.
Order from ATS $4.50 ATS-40N51R

Trans. of Khim[iko]-Tekhnol[ogicheskii] Inst[itut] Moscow. Trudy (USSR) 1956, v. 22, p. 113-115.

DESCRIPTORS: *Acetates, Ions, Determination, *Acetic acids, Salts, *Chromatographic analysis.

Freytag, H.
OBSERVATIONS ON THE DETECTION OF THIOL GROUPS. [1961] 13p.
Order from ATS $27.80 ATS-31N56G

Trans. of Z[eitschrift für] Anal[ytische] Chem[ie] (West Germany) 1954, v. 143, p. 401-414.

DESCRIPTORS: *Thiols, Detection.

Huber, Walter.
PAPER CHROMATOGRAPHY OF OLEFINS. [1961] 13p. 10 refs.
Order from SLA $1.60 61-20748

Trans. of Mikrochimica Acta (Austria) 1960, no. 1, p. 44-53.

DESCRIPTORS: *Paper chromatography, *Ethylenes, Separation, Molecular weight, Mixtures, Hydrocarbons, Identification, Chemical bonds, Isomers.

By reaction with mercury acetate, olefins can be converted into nonvolatile addition compounds, which can be separated by paper chromatography. Consequently, it is possible to detect olefins in any hydrocarbon mixtures by simple means and to characterize them from the standpoint of molecular weight. Since no preliminary operations are needed, such as fractionations, the procedure is quite rapid. Single components can be determined in many instances. (Author)

Janak, J. and Komers, R.
SEPARATION AND ANALYSIS OF DIHYDRIC PHENOLS BY GAS CHROMATOGRAPHY. Jan 62.
Order from BISI £2 10s BISI-2551

Trans. of [Sbornik Chekhoslovatskykh Khimicheskykh Rabot] 1959, v. 24, June, p. 1960-1966.

DESCRIPTORS: *Hydrogen, *Phenols, Separation, Chromatographic analysis, *Gas chromatography.

Szymanskii, Herman A., ed.
PROGRESS IN INDUSTRIAL GAS CHROMATOGRAPHY, VOL 1. Dec 61, 232p.
Order from PLP $8.50

Trans. of unidentified Russian mono. containing the proceedings of the advanced sessions held by the Canisius College Gas Chromatography Institute, Apr 61.

DESCRIPTORS: *Gas chromatography, Chromatographic analysis.

Inorganic Chemistry

THE INVESTIGATION OF TITANATE CALCIUM. [1961] [6]p. (refs. omitted).
Order from OTS or SLA $1.10 61-20894

Trans. of Zhur[nal] Neorgan[icheskoi] Khim[ii] (USSR) [1956] v. 1, no. 4, p. 615-618.

DESCRIPTORS: *Titanates, *Calcium, Microstructure, Chemical analysis, X-ray diffraction analysis.

The dititanate tricalcium has a dimorphism, developing a converse transition at 765°. There develops in the reducing medium at the melting point of dititanate tricalcium a composition, characterized by the cubic symmetry: a = 7,724A. The absolutness of the reaction $3CaO \cdot 2TiO_2 \rightarrow 3\,CaO \cdot Ti_2O_3 + \frac{1}{2}\,O_2$ can be controlled microscopically upon the disappearance of the double-refraching crystals of dititanate tricalcium. The composition of $3CaO \cdot Ti_2O_3$ is the structural analogue of aluminate tricalcium. (Author)

JOURNAL OF INORGANIC CHEMISTRY, 1957, VOL. 2, INDEX. [Jan 62] 86p. PL-480 AEC.
Order from OTS $1.00 AEC-tr-4434

Index to trans. of Zhurnal Neorganicheskoi Khimii (USSR) 1957, v. 2.

DESCRIPTORS: *Chemistry, Periodicals, *Indexes.

JOURNAL OF INORGANIC CHEMISTRY, 1958, VOL. 3, NO. 8. [Jan 62] 376p. refs. PL-480 AEC.
Order from OTS $3.75 AEC-tr-4456

Trans. of Zhurnal Neorganicheskoi Khimii (USSR) 1958, v. 3, no. 8, p. 1721-[1990].

DESCRIPTORS: *Chemistry, Periodicals, *Inorganic substances, Complex compounds, Rare earth elements

Thermochemistry, Electrochemistry, Oxidation - reduction reactions, Ruthenium compounds, Chlorides, Titanium compounds, Hydrides, Fluorides, Niobium compounds, Tantalum compounds, Molybdenum compounds, Uranium compounds, Oxides, Hydroxy radicals, Hydroxides, Sulfuric acid, Selenium, Iron compounds, Indium, Tellurium, Chlorates, Rhodium compounds, Platinum, Cobalt compounds, Lithium compounds, Acetic acids, Calcium compounds, Tungsten compounds, Thallium compounds, Oxygen compounds, Sodium compounds, Potassium compounds, Barium compounds, Cerium compounds, Ammonium radicals, Iodides, Carbonates, Sulfates, Nitrates, Copper compounds, Ammonia, Oxalates, Phosphates, Thorium, Protactinium, Phosphoric acids, Perchlorates, Succinates, Uranyl radicals, Zirconium compounds, Hafnium compounds, Phosphorus compounds, Water, Solutions

Contents:

The pressure of dissociation and sublimation of ruthenium trichloride, by S. A. Shchukarev, and others

The synthesis and properties of tantalum hydrides, by E. I. Krylov and A. M. Anan'ina

Synthesis of higher fluorides of niobium, tantalum and molybdenum with the aid of chlorine trifluoride, by N. S. Nikolaev and others

True heat capacities of UO_2, U_3O_8, and UO_3 at high temperatures, by M. M. Popov and others

Polarographic study of hydroxy-salt solutions, by N. V. Aksel'rud

Study of basic salts and hydroxides of metals, by N. V. Aksel'rud and V. B. Spivakovskii

Interaction of selenious acid and sulfurous acid, by I. V. Yanitskii and V. I. Zelionkaite

Coprecipitation of small quantities of selenium with ferric hydroxide, by V. I. Plotnikov

Interaction of indium with selenium and tellurium in sulfate solutions, by A. A. Shokol and S. A. Kacherova

The thermochemistry of dissociation of sulfuric and hypochlorous acids in aqueous solution, by I. E. Flis and others

Calculation of fundamental thermodynamic properties of ClO^-_{aq} and $HClO_{aq}$ at 25°, by I. E. Flis and others

Isomolar nature of the solutions used in the Ostromyslenskii - job method, by L. P. Adamovich and others

Polarographic study of the reduction of the chloroiridate ion on a platinum electrode, by N. K. Pshenitsyn and others

Study of rhodium chloride complexes by methods of electrophoresis and paper chromatography and by ion-exchange chromatography, by M. Lederer

The existence of complex compounds of bivalent palladium with a co-ordination number greater than four, by A. A. Grinberg and N. V. Kiseleva

Kinetic investigations of some complexes of bivalent platinum. The mutual influence of co-ordinated groups, by A. A. Grinberg and Yu. N. Kukushkin

Isothiocyanatoiodo-bis-dimethylglyoximecobalt (III) acid, by A. V. Ablov and N. M. Samus'

The problem of obtaining lithium fluoroberyllate from aqueous solutions, by O. I. Vorob'eva and others

Investigation of the reaction of formation of compounds of certain rare-earth elements with hexamethylenediaminetetraacetic acid, by A. A. Kuz'menko

The effect of addition of boric anhydride on the formation of calcium zirconate, II, by A. K. Kuznetsov

Complex cyanides of tetravalent tungsten, by K. N. Mikhalevich and V. M. Litvinchuk

Formation of the complex bromides of monovalent thallium, by F. Ya. Kul'ba and others

The determination of the stability of some inorganic compounds containing oxygen of the pH of the medium, by P. A. Epik and A. I. Orochko

Oxidation-reduction reactions in the co-ordination sphere, by Ya. D. Fridman

Electrochemical behavior of titanium nitride in chloride melts, by M. V. Smirnov and Yu. N. Krasnov

Ternary systems $Na \| Cl$, MoO_4, WO_4 and $K \| Cl$, MoO_4, WO_4, by Z. A. Mateiko and G. A. Bukhalova

Study of the ternary systems BaI_2-NaI-CH_3OH and $CeCl_3$-NH_4Cl--CH_3OH by the methods of physicochemical analysis, by A. Ya. Deich

The ternary system of sodium, cobalt and nickel chlorides, by K. A. Bol'shakov and others

The ternary system of sodium, cobalt and nickel sulfates, II, by K. A. Bol'shakov and P. I. Fedorov

Quaternary reciprocal system of fluorides, sulfates and carbonates of sodium and potassium, by A. G. Bergman and V. V. Rubleva

The reciprocal system of calcium and sodium nitrates and chlorides, by M. V. Tokareva and others

Interaction of chlorides of rare-earth metals with chlorides of alkali and alkaline-earth metals, by Sun In' - chzhu and I. S. Morozov

The solubility of copper nitrate in aqueous solutions of ammonia, by A. K. Kirakosyan and V. D. Galustyan

Determination of the solubility product of plutonyl oxalate, by L. E. Drabkina and others

Extraction of thorium with tributyl phosphate. III. Effect of SO_4^{2-} ions on the distribution of thorium, by E. P. Maiorova and V. V. Fomin

Extraction of protactinium by alkyl phosphoric acids, by V. B. Shevchenko and others

Study of the extraction of protactinium by mono- and diisoamylphosphoric acid, by V. A. Mikhailov and others

Extraction of uranyl perchlorate with tributyl phosphate, by V. B. Shevchenko and others

Preparation of the calcium salt of uranyl succinate, by A. B. Bekturov and A. K. Il'yasov

The solubility of lithium carbonate in solutions of lithium chloride, by G. I. Volkov and V. I. Grinevich

Structure of 12-phosphotungstate anions in aqueous solutions, by A. Babad - Zakhryapin

Determination of the relative volatility of the products of interaction of $ZrCl_4$ and $HfCl_4$ with $POCl_3$, by G. A. Yagodin and others

The compounds of hafnium tetrachloride with phosphorus oxychloride, by I. A. Sheka and B. A. Voitovich

Equilibrium in copper borotungstate-water system, by E. A. Nikitina and O. N. Sokolova

The effect of the addition of certain salts on the solubility of calcium molybdate, by V. I. Spitsyn and I. A. Savich

Symposium on methods of study of complex formation in solutions, by V. P. Vasil'ev and others

Convention on inorganic chemistry in the ukrainian republic (no. 3) by N. K. Davidenko

Convention on the chemistry of heteropolyacids, by A. V. Ablov and Ts. B. Konunova

Rules for authors

Author and subject indexes.

Samsonov, G. V.
BORIDES OF RARE EARTH METALS [Boridy Redkozemel'nykh Metallov]. 1 May 61, 57p. 72refs.
Order from OTS or SLA $5.60 61-18577

Trans. of Uspekhi Khimii (USSR) 1959, v. 28 [no. 2] p. 189-217.
An unedited rough draft trans. is available from OTS or SLA $3.60 as 61-19787, MCL-149/1, 11 Oct 60 [32]p.

DESCRIPTORS: *Borides, *Rare earth elements, *Rare earth compounds, Crystal structure, Physical properties

Organic Chemistry

PROCESS FOR THE PREPARATION OF CARBONYL COMPOUNDS FROM OLEFINS. [1961] 3200 words.
Order from CTS(Chem) $12.80 CTS(Chem)-253
subsequent copies $ 2.15/ea

Trans. of Italian patent 580,541, by Montecatini Societá' Generale per l'Industria Mineraria e Chimica, filed 31 Oct 57, issued 6 Aug 58.

DESCRIPTORS: *Carbonyl radicals, Synthesis, Ethylenes, Oxidation.

PROCESS FOR THE TREATMENT, BY MEANS OF ADSORBENTS, OF VARIOUS ORGANIC PRODUCTS AND, IN PARTICULAR, OF HYDROCARBONS. [1961] 7p.
Order from ATS $10.95 ATS-24N58F

Trans. of French patent 1,064,233, by Société Anonyme d'Exploitations Petrolieres Antar et Raffineries Françaises de Pétrole de l'Atlantique, filed 9 Oct 52, granted 23 Dec 53, pub. 12 May 54.

DESCRIPTORS: *Hydrocarbons, *Absorbents.

Asta, Gino dall' and Bassi, Ivano Walter.
PREPARATION AND CRYSTALLINE STRUCTURE OF ISOTACTIC POLYVINYL n-BUTYL ETHER. [1961] 3300 words, 17 refs.
Order from CTS(Chem) $13.20 CTS(Chem)-252
subsequent copies $ 2.50/ea.

Trans. of [la] Chimica e [l]'Industria (Italy) 1961, v. 43, no. 9, p. 999-1003.

DESCRIPTORS: *Ethers, *Vinyl radicals, *Butyl radicals, Polymerization, *Polymers, Crystal structure, Aluminum, Catalysts, Friedel-Crafts reactions, Stereochemistry, Ethylenes.

Gefter, E. L.
ORGANOPHOSPHORUS MONOMERS AND POLYMERS, trans. by J. Burdon. Jan 62, approx. 300p.
Order from PP $15.00

Trans. of [Fotororganicheskie Monomery i Polimery, Moscow, 1960, 287p.].
Another trans. is available from ATS until 26 Feb 62, $13.00, after 26 Feb 62, $14.75.

DESCRIPTORS: Organic compounds, Refraction, *Phosphorus, *Polymers, Molecular structure, *Phosphorus compounds.

Kawakami, H. and Kawashima, K.
PREPARATION OF SYNTHETIC FIBERS FROM MIXTURES OF POLYVINYL ALCOHOL AND VINYL METHYL ETHER-MALEIC ACID COPOLYMERS. Pt. 1 of Studies on the Preparation of Synthetic Fibers from Mixtures of Polyvinyl Alcohol and Other Water-Soluble Polymers. [1961] 8p.
Order from ATS $12.20 ATS-76N57J

Trans. of Sen-i Gakkaishi (Japan) 1961, v. 17, p. 325-329.

DESCRIPTORS: *Synthetic fibers, Fibers, *Vinyl radicals, Alcohols, *Polymers, Methyl radicals, Ethers, *Malic acid, Copolymerization.

L'vov, V. N.
POLYMERIZATION OF MIXTURE OF OLEFINS AND DIOLEFINS IN THE PRESENCE OF METALLIC SODIUM. [1961] 8p. 6 refs.
Order from OTS or SLA $1.10 61-18057

Trans. of Kauchuk i Rezina (USSR) 1940, no. 7, p. 16-19.

DESCRIPTORS: *Ethylenes, *Methyl radicals, *Butadienes, *Isoprene, *Butenes, Polymerization, Hydrocarbons, *Sodium, Chemical reactions.

Mikhailov, G. I. and Ermakova, A. M.
PREPARATION OF PYROCATECHOL FROM GUAIACOL. [1961] 3p. 8 refs.
Order from OTS or SLA $1.10 61-18140

Trans. of Institut Chistykh Khimicheskikh Reaktivov. Trudy (USSR) 1941, v. 18, p. 80-82.

DESCRIPTORS: *Pyrocatechol, Synthesis, *Methyl ethers, Hydrochloric acids, Acids, Ethers, Chemical reactions.

A method of demethylation of guaiacol with the aid of 8-9% hydrochloric acid under 15 atm pressure is proposed, with which pure catechol can be obtained with mp 105-106° in yields of 73-80% theor. (Author)

Rieche, Alfred and Seeboth, Helmuth.
THE REACTIONS OF NAPTHOLS AND NAPTHYLAMINES UNDER THE INFLUENCE OF HYDROGEN SULFITE (BUCHERER REACTION). I. PROPERTIES AND STRUCTURE OF INTERMEDIARIES OF THE BUCHERER REACTION. [1961] 21p.
Order from SLA $2.60 62-10047

Trans. of [Justus Liebigs] Annalen der Chemie (West Germany) 1960, v. 638, p. 43-56.

DESCRIPTORS: *Naphthalenes, *Amines, *Naphthyl radicals, *Hydrogen compounds, Sulfites, Chemical reactions, Hydroxides, Sulfonic acids, Acids, Complex compounds, Chemical properties, Crystal structure.

Rieche, Alfred and Seeboth, Helmuth.
REACTIONS OF NAPHTHOLS AND NAPHTHYLAMINES UNDER THE INFLUENCE OF HYDROGEN SULFITE. (BUCHERER REACTION). II. m-TETRALIN SULFONIC ACIDS AS INTERMEDIARIES OF THE BUCHERER REACTION. [1961] 16p.
Order from SLA $1.60 62-10039

Trans. of [Justus Liebigs] Annalen der Chemie (West Germany) 1960, v. 638, p. 57-66.

DESCRIPTORS: *Naphthalenes, *Amines, *Naphthyl radicals, Hydrogen compounds, Sulfites, Chemical reactions, Hydroxides, *Sulfonic acids, Acids, Complex compounds.

See also 62-10047

Rieche, Alfred and Seeboth, Helmuth.
REACTIONS OF NAPHTHOLS AND NAPHTHYLAMINES UNDER THE INFLUENCE OF HYDROGEN SULFITE. (BUCHERER REACTION). IV. THE ADDITION COMPOUND OF B-NAPHTHOL AND $NaHSO_3$. [1961] 8p.
Order from SLA $1.10 62-10037

Trans. of [Justus Liebigs] Annalen der Chemie (West Germany) 1960, v. 638, p. 76-81.

DESCRIPTORS: *Naphthalenes, *Amines, *Naphthyl radicals, *Hydrogen compounds, Sulfites, Chemical reactions, *Sodium compounds, Complex compounds.

See also 62-10038

Rudkovskii, D. M.
THE FEASIBILITY OF SYNTHESIZING AMINES BY THE ADDITION OF AMMONIA TO OLEFINS. [1961] 6p.
Order from ATS $7.65 ATS-79N54R

Trans. of Trudy Opytno-Issledovatel Zavoda Khimgaz [sic] 1936, v. 3, p. 197-202.

DESCRIPTORS: *Amines, Synthesis, *Ammonia, *Ethylenes

Stoll, M. and Rouve, A.
THE CYCLIC ACYLOINS. Pt. 3 of Synthesis of Macrocyclic Compounds with an Odor of Musk. [1961] 16p.
Order from ATS $21.85 ATS-72N57F

Trans. of Helvetical] Chim[ica] Acta (Switzerland) 1947, v. 30, no. 6, p. 1822-1836.

DESCRIPTORS: *Acyloins, Synthesis

Sulaimankulov, K.
INTERACTION OF UREA WITH MINERAL SALTS. [1961] 7p.
Order from ATS $12.80 ATS-89N55R

Trans. of mono. Trudy Molodykh Nauch. Rabotnikov, Akad. Nauk Kirgiz. SSR, 1958, p. 81-87.

DESCRIPTORS: *Urea, Minerals, *Salts, Chemical reactions.

Takahashi, T. and Yamamoto, Y.
DERIVATIVES OF 2-CHLORO-3, 5-DINITROPYRIDINE. Pt. 44 of the Syntheses of Heterocyclic compounds of Nitrogen. [1961] 4p.
Order from ATS $7.50 ATS-34N56J

Trans. of Yakugaku Zasshi (Japan) 1949, v. 69, no. 6/10, p. 159-161.

DESCRIPTORS: *Nitrogen compounds, *Heterocyclic compounds, Synthesis, *Chlorides, *Pyridine derivatives, Nitro radicals.

Vereshchagin, L. I. and Kotlyarevskii, I. L.
PROGRESS IN THE SYNTHESIS OF ALKYLPYRIDINES. 31 Jan 62. 37p. 287 refs. JPRS: 12234.
Order from OTS $1.00 62-11130

Trans. of #Uspekhi Khimii (USSR) 1961, v. 30, no. 8, p. 982-1012.

Portions of this report will not reproduce well.

DESCRIPTORS: *Pyridines, *Alkyl radicals, Synthesis, Chemical reactions, Acetylenes, Hydrocarbons, Heterocyclic compounds.

Wesslau, H.
CHAIN LENGTH DISTRIBUTION OF ALKYL CHAINS IN THE CONTINUOUS ORGANOMETALLIC SYNTHESIS REACTION AS AN EXAMPLE FOR THE CALCULATION OF A REACTION IN THE CASCADE REACTOR. [1961] 5p.
Order from ATS $7.25 ATS-94N56G

Trans. of Chem[ie]-Ing[enieur]-Tech[nik] (West Germany) 1961, v. 33, no. 8, p. 556-558.

DESCRIPTORS: *Metalorganic compounds, Synthesis, Chemical reactions, *Alkyl radicals.

Ziegler, K[arl], Köster, R[oland] and others.
NEW COMPLEX COMPOUNDS OF ALUMINUM ALKYLS. Pt. 30 of Metallo-organic Compounds. [1961] 14p. (introduction experimental part footnotes omitted) 4 refs.
Order from SLA $1.60 61-20862

Trans. of [Justus Liebigs] Ann[alen der] Chem[ie] (West Germany) 1960, v. 629 [no. 1/3] p. 33-49. Another trans. is available from SLA $2.60 as 61-20453 [1961] 29p.

DESCRIPTORS: Metalorganic compounds, *Aluminum compounds, *Alkyl radicals, Chemical reactions, *Chemical compounds, Synthesis

Physical Chemistry

[TRANSACTIONS (REPORTS) OF THE ACADEMY OF SCIENCES OF THE USSR] 1943, VOL. 38, NO. 9: [PARTIAL TABLE OF CONTENTS] AND SELECTED ABSTRACT. [1961] [1]p.
Order from OTS or SLA $1.10 61-20299

Abstract trans. of [Akademiya Nauk SSSR]. Comptes Rendus (Doklady) de l'Academie des Sciences de l'U. R. S. S., 1943, v. 38, no. 9, p. 327-330.

DESCRIPTORS: Reports, Abstracting, Scientific research, *Ethylenes, *Platinum, *Stereochemistry, Molecular structure, *Chemical bonds, Inorganic substances, Polymorphism.

Contents:
Preparation of ethylene complexes of platinum with four different substituent groups in the inner sphere, by Anna Gel'man.

Ablezova, K., Roginskii, S., and Tselinskaya, T.
ABSORPTION CHARACTERISTICS OF GAS PROMOTED NICKEL [1961] [1]p. 1 ref.
Order from OTS or SLA $1.10 61-20819

Reprint of [Akademiya Nauk SSSR]. Comptes Rendus (Doklady) l'Academie des Sciences de l'U. R. S. S., 1941, v. 30, no. 1, p. 29-31.

DESCRIPTORS: *Nickel, Adsorbents, Gases, Adsorption, Catalysts, Catalysis.

A comparative study of molecular adsorption of a number of gases on layers promoted by hydrogen (and respectively by oxygen) and on an unpromoted layer, shows clearly that the promotion effect is in no way connected with changes in the specific surfaces of the contacts, nor with changes in the content of sections with high molecular adsorption heat. The true surface surpasses by 2 to 8 times the geometrical surface for both promoted and unpromoted layers. Appreciable differences in the velocities of activized sorption of ethylene and hydrogen on two types of layers make probable the assumption, that the promoter acts directly on the velocity of the chemosorption stages and influences catalysis through them. (Author)

Balandin, A. A. and Eydus, Ya. T.
ROLE OF THE PRINCIPLE OF CONSERVATION OF THE VALENCE ANGLE IN THE MULTIPLET THEORY OF CATALYSIS. [1961] [4]p. 22 refs.
Order from OTS or SLA $1.10 61-20136

Trans. of [Akademiya Nauk SSSR]. Comptes Rendus (Doklady) l'Academie des Sciences de l'U. R. S. S., 1945, v. 49, p. 655-658.

DESCRIPTORS: *Valence, Theory, *Catalysis, *Adsorption, Molecular association, Metals, Lattices, Bonding, Stresses, *Heat of reaction, Hydrogenation, Metallic crystals, Deformation.

Berenson, S. P.
THE LACQUER-FORMING PROPERTIES OF OILS IN THE VAPOUR PHASE, tr. by Lionel Mote. [1961] [8]p. 6 refs. TRC Trans. no. 1050; [DSIR LLU] M4001.
Order from OTS or SLA $1.10 61-28176

Trans. of Khimiya [i] Tekhnologiya Topliv i Masel (USSR) 1960 [v. 5] no. 10, p. 38-41.

DESCRIPTORS: *Oils, *Vaporization, *Varnishes, *Phase transitions, Physical properties, Chemical reactions.

Tests indicated that vapour-phase lacquer-formation represents one of the important elements in the process of formation of lacquer deposits. The intensity of the lacquer-formation in the vapour phase depends on the temperature, chemical and fractional composition of the oil and the presence of additives and carbonaceous substances.

Cantow, E.-J. and Breiner, R.
ON THE MOLECULAR STRUCTURE OF POLYBUTADIENES. [1961] 1p.
Order from SLA $1.10 61-20997

Trans. of an unidentified article, n.p., n.d.

DESCRIPTORS: *Molecular structure, *Butadienes, Polymers, Configuration, Vulcanizates, Isomeric transitions.

The present document appears to be the translation of only a part (possibly the introduction) of a longer paper.

Delimarskii, Yu. K. and Markov, B. F.
ELECTROCHEMISTRY OF FUSED SALTS, tr. by Adam Peiperl and Reuben E. Wood. Dec. 61, 353p.
Order from Sigma Press, Publishers, 2140 K. St., N. W., Washington, D. C. $12.50

Trans. of mono. [Elektrokhimiya Rasplavlennykh Solei, Moscow, 1960, 325p.].

DESCRIPTORS: *Fused materials, *Salts, *Electrochemistry, Electrical conductance, Electrolytes, Decomposition, Electrodes, Potential theory, Solvent action, Metals, Solubility, Electrolysis, Polarization.

Folberth, O. G.
THE VAPOR PRESSURE OF THE COMPOUNDS InAs, GaAs, InP AND GaP. [1961] 7p.
Order from ATS $12.60 ATS-72N49G

Trans. of Phys[ics and] Chem[istry of] Solids (U. S.) 1958, v. 7, p. 295-300.

DESCRIPTORS: *Gallium compounds, *Indium compounds, *Arsenides, *Phosphorus, Vapor pressure, Phosphides.

Korovin, N. V.
CATHODIC PROCESSES OCCURRING DURING THE ELECTRODISPOSITION OF IRON-NICKEL ALLOYS. [1961] 6p. 25 refs.
Order from OTS or SLA $1.10 62-10313

Trans. of Zhur[nal] Neorg[anicheskoi] Khim[ii] (USSR) 1957, v. 2, no. 9, p. 2259-2263.
Another trans. is available from ATS $13.00 as ATS-20M45R [1960] 6p.

DESCRIPTORS: *Iron alloys, *Nickel alloys, *Electrodeposition, Solids, Solutions, Fluidized solids, Inhibition, Ions, Reduction, Chemical reactions, Electrolytes, Metallurgical analysis, Cathodes, Sensitivity, Metals, Alloys, Sodium compounds, Citrates, Stability, Complex ions.

It is shown that, during simultaneous discharge [codeposition] on a cathode, iron is deposited preferentially to nickel. The hypothesis is proposed that this occurs, on the one hand, as a result of the depolarizing effect of nickel on the deposition potential of iron during the formation of a solid solution and, on the other hand, as the result of the inhibiting effect of the discharge of iron ions upon the discharge of nickel ions, since the reaction of reduction of the iron by requiring a smaller activation energy, suppresses the reaction of reduction of the nickel. The curve of the relation of the iron content in the alloy to the current density goes through a maximum as a result the opposing influences of two factors upon the composition of the alloy, namely: the variation in overvoltage differences and the variation in the composition of the electrolyte in the layer that lies in the vicinity of the cathode. With an increase in the concentration of iron in the solution, its proportion in the alloy is increased, and the composition of the alloy becomes less sensitive to variations in current density. The opinion is offered that the complex ion of nickel and citrate is more stable than is the analogous complex ion of iron. (Author)

Kuznetsov, M. D. and Oratovskii, V. I.
THE RATE OF CHEMISORPTION IN A VENTURI-TYPE APPARATUS. [1961] 7p.
Order from ATS $9.70 ATS-83N57R

Trans. of Izvest[iya] Vysshikh Ucheb[nykh] Zavedenii. Khim[iya] i Khim[icheskaya] Tekhnol[ogiya] (USSR) 1961, v. 4, no. 1, p. 142-147.

DESCRIPTORS: *Absorption, *Adsorption, Velocity, Measurement, *Venturi tubes.

Manson, N.
FORMATION AND SPEED OF SPHERICAL EXPLOSIVE WAVES IN GASEOUS MIXTURES. July 59 [22]p. 17 refs. Picatinny Arsenal Trans. no. 45.
Order from OTS or SLA $2.60 59-18472

Trans. of Revue de l'Institut Français [du] Pétrole [et Annales des Combustibles Liquides] (France) 1954, v. 9, p. 133-143.

DESCRIPTORS: *Explosions, *Gases, Oxygen, Acetylenes, Propanes, Ethylenes, Methanes, Natural gase, Preparation, Ignition, Detonation, *Detonation waves, Propagation, Velocity, Combustion.

Experiments were carried out on mixtures of oxygen and various gases: acetylene, propane, gas with ethylene and methane base, natural gas from St.Marcet These gaseous mixtures were contained in transparent latex balloons of 30, 38 and 60 cm in diameter. By adopting a convenient system of ignition placed in the center of the balloons, it was possible to register spherical explosive waves having the same speed as in tubes and in a large range of mixture strength (although considerably narrower than in tubes), which is a function of the method of ignition. These waves are often set in motion near the source of ignition, but in certain instances (electric starter for instance) a short pre-detonation period, similar to that observed in tubes, was recorded. Results confirm the theories of G. L. Taylor and of J. B. Zeldovitch. (Author)

Nakhodnova, A. P.
THE ELECTRICAL CONDUCTIVITY OF THE OXIDES OF THE METALS IN GROUP II OF MENDELEEV'S PERIODIC SYSTEM (Elektroprovodnost' Okislov Metallov II Gruppy Periodicheskoi Sistemy D. I. Mendeleeva). Nov 61 [7]p. 10 refs. RTS 1959.
Order from OTS or SLA $1.10 61-28914

Trans. of Zhurnal Fizicheskoi Khimii (USSR) 1956, v. 30, no. 7, p. 1469-1472.

DESCRIPTORS: *Electrical conductance, *Oxides, *Metals, Temperature, Chemical analysis, Lattices, Crystal structure, Electric currents, Chemical elements, Periodic variations, Chemical industry, Chemical engineering.

The temperature-dependence of the conductivity of the oxides of Be, Ag, Ca, Sr, Ba, and Zn shows an exponential increase between 280 and 930°C which is characteristic of ionic conduction. The electrical conductivity increases as the lattice energy of the oxide is made smaller. The activation energy of the current carriers decreases gradually as the lattice energy of the crystal decreases. As in the case of other semiconductors and dielectrics, the low-temperature conductivity is sensitive to the presence of impurities. (Author)

Ogorodnikov, S. K., Kogan, V. B., and Nemtsov, M. S.
LIQUID-VAPOR EQUILIBRIUM IN SYSTEMS, FORMED BY METHANOL WITH HYDROCARBONS. [1961] 12p. 24 refs.
Order from OTS or SLA $1.60 61-18588

Trans. of #Zhur[nal] Priklad[noi] Khimii (USSR) 1960, v. 33 [no. 12] p. 2685-2692.

DESCRIPTORS: *Methanols, *Hydrocarbons, *Chemical equilibrium, Liquids, Vapors, Isomers, Mixtures, Ethylenes, Fractionation.

Liquid-vapor equilibrium in seven binary systems, composed of methanol and of C_5 hydrocarbons of different structure (isopentane, pentene-1, methylethylene, trimethylethylene, isoprene, trans-piperylene), and also of n-decane, was studied. It was found, that within the limits of one class of C_5 hydrocarbons the interaction intensity of different isomers with methanol is practically equal. For paraffins this rule spreads not only to isomers, but also to mixtures with close homologs. Deviations from ideality in the studied systems increase in the row: diens, olefins, paraffins. Results show the inadequacy of methanol as separating agent for fractionation of isomeric mixtures of a same class, and the possibility of the use of data on equilibrium for one hydrocarbon, during calculation of systems, containing its isomers or close homologs.

Samartsev, A. G.
MECHANISM OF IRON PASSIVATION IN ALKALINE SOLUTIONS OF OXIDIZING AGENTS. [1961] 2p.
Order from OTS or SLA $1.10 61-20313

Abstract trans. of [Akademiya Nauk SSSR.] Comptes Rendus (Doklady) de l'Academie des Sciences de l'U. R. S. S., 1942, v. 35, no. 7, p. 206-209.

DESCRIPTORS: *Iron, *Passivity, Thin films, Surfaces, Oxides, Solutions, Temperature, Sodium compounds, Hydroxides, Chemical analysis, Stirrers.

Sanzharovskii, A. T.
THE ROLE OF SO_2 IN THE ELECTROLYSIS OF MANGANESE. 30 Aug 60, 9p. 15 refs.
Order from OTS or SLA $1.10 61-20697

Trans. of Moskov[skaya] Sel'skokhov[yaistvennaya Akademiya]. Doklady, 1958, v. 32, p. 512-517.

DESCRIPTORS: *Manganese, *Electrolysis, *Sulfur compounds, *Dioxides, Chemical reactions, Hydrogen ion concentration, Electrochemistry.

To obtain pure manganese from a bath containing additions of SO_2 electrolysis should be carried out at a pH from 4 to 6. This produces a decrease in dendrite formation on the cathode, an increase in current yield, and gives a minimum amount of sulfur in the deposit which is an important factor for the metallurgical industry, the main consumer of manganese. To obtain a coating of manganese, electrolysis should be carried out at a pH of less than 4. This guarantees formation of dense, hard layers, which may find a wide application as durable coatings in the machine industry and in maintenance. (Author)

Shekhter, A., Roginskii, S., and Isaev, B.
ELECTRON-MICROSCOPICAL INVESTIGATION OF CATALYSTS. I. ASBESTOS AS A CARRIER. [1961] 7p. 6 refs.
Order from OTS or SLA $1.10 61-18334

Trans. of Acta Physicochimica U. R. S. S., 1945, v. 20, p. 117-126 (also pub. in Akademiya Nauk SSSR. Otdelenie Khimicheskikh Nauk. Izvestiya, 1945, p. 322-328).

DESCRIPTORS: *Catalysts, *Electron microscopy, *Asbestos fibers, Fibers.

The electron-microscopical method was applied to a study of carrier catalysts, in particular to oxide and metal contacts deposited on asbestos. The effect of heating on the structure of chrysotile and anthophyllite asbestos was studied and destruction of fibers, beginning at different temperatures for these two mineralogic forms of asbestos, photographed. For both sorts of asbestos it is shown that the microscopic fibers of these specimens contain extremely thin threads of the order of several tens of Ångstroms, i.e. approaching the elementary cell diameter. The catalyst particles settle on the asbestos in the form of sharply defined grains and are comparatively sparsely distributed over the fibers. The material is polydispersed and contains simultaneously isolated crystals, druses and complex forms of aggregation, these latter being sharply non-homogeneous with respect to the crystal size and form. No crystal protuberances could be detected, even at magnifications up to 100, 000 times (Author)

Tyuryaev, I. Ya. and Erofeeva, A. V.
KINETIC RELATIONSHIPS OF BUTANE DEHYDROGENATION IN A SUSPENDED CATALYST LAYER. [1961] 8p. 12 refs.
Order from OTS or SLA $1.10 61-18587

Trans. of #Zhur[nal] Priklad[noi] Khimii (USSR) 1961, v. 37 [no. 2] p. 370-375.

DESCRIPTORS: *Butanes, *Dehydrogenation, Catalysts, Butenes, Chemical reactions, *Reaction, Binetics.

Upon investigating the relationship of butane dehydrogenation in a suspended layer of catalyst and studying the effect of layer height, reactor diameter, particle size, and of temperature and butane supply rate on the butylene yield and on the process selectivity, it was found, that the yields and selectivity are smaller in the suspensed layer, than in a reactor with immobile layer, which is explained through mixing and passage of the gas. (Author)

Tsvetkov, Yu. D., Lebedev, Ya. S., and Voevodskii, V. V.
ETUDE DES RÉACTIONS DES RADICAUX LIBRES, DANS LE POLYTETRAFLUORÉTHYLENE IRRADIÉ. II. DÉTERMINATION DES CONSTANTES DES VITESSES DE RÉACTON SUIVANTES: $\dot{R}O_2 \rightarrow \dot{R} + O_2$ et $\dot{R} + O_2 \rightarrow \dot{R}O_2$ (Issledovanie Reaktsii Svobodnykh Radikalov v Obluchennom Poliletraftorelilene. II. Opredelenie Konstant Skorostei Reaktsii: $\dot{R}O_2 \rightarrow \dot{R} + O_2$ i $\dot{R} + O_2 \rightarrow \dot{R}O_2$) [Studies of Free Radical Reactions in Irradiated Polytetrafluoroethylene. II. Determination of the Rate Constant of the Reactions $\dot{R}O_2 \rightleftarrows \dot{R} + O_2$ and $\dot{R} + O_2 \rightleftarrows \dot{R}O_2$] tr. by Szyszman. [1961] [28]p. (Russian text included) 5 refs. CEA Trans. no. R 1402 (text in French).
Order from OTS or SLA $2.60 62-13817

Trans. in French of Vysokomol[ekulyarnye] Soedineniya (USSR) 1959, v. 1, no. 11, p. 1634-1642.
A trans in English is available from LC or SLA mi$2.40, ph$3.30 as 60-16526 [1960] 11p.

DESCRIPTORS: *Free radicals, Chemical reactions, *Ethylenes, *Fluorides, Polymers, Radiation effects, Thermodynamics, *Paramagnetic resonance, Decomposition, Oxygen, Diffusion, Solubility.

For abstract see Technical Translations 4: 319, 1960.

Ulrich, Fritz von and Wittig, Hermann.
OXIDATION OF LUMP COALS FOR LOWERING THEIR COKING PROPERTIES. [1960] 24p. 6 refs.
Order from OTS or SLA $2.60 60-17595

Trans. of [GWF; das] Gas- und Wasserfach (West Germany) 1959, v. 100, no. 13, p. 309-317.

DESCRIPTORS: *Coal, Oxidation, Physical properties, *Coke,

Vetter, K. J.
THE MECHANISM OF FORMATION OF THE IODINE-IODIDE OXIDATION-REDUCTION POTENTIAL AT PLATINUM DERIVED FROM THE ALTERNATING CURRENT POLARIZATION. [1961] 11p.
Order from ATS $13.50 ATS-45N56G

Trans. of Z[eitschrift für] Physik[alische] Chem[ie, Leipzig] (East Germany) 1952, v. 199, no. 5/6, p. 285-299.

DESCRIPTORS: *Iodine, *Iodides, Oxidation-reduction reactions, *Platinum, Alternating current, Polarization.

Zepalova-Mikhailova, L. A.
FACTORS IN PERFORMANCE OF LABORATORY FRACTIONATING COLUMNS. [1961] 6p. 6 refs.
Order from OTS or SLA $1.10 61-18149

Trans. of Institut Chistykh Khimicheskikh Reaktivov. Trudy (USSR) 1941, v. 18, p. 3-10.

DESCRIPTORS: *Laboratory equipment, *Fractionation, *Distilling plants.

When components are fractionated of close boiling points, reflux formation in a homothermal condenser depends exclusively upon the amount of liquid in the latter and is independent of the amount of vapor entering the condenser per unit time. The dependence of the reflux formation upon the amount of liquid in the condenser is a linear function. (Author)

EARTH SCIENCES

GENERAL GEOCRYOLOGY, tr. by C. DeLeuchlenberg. Aug 61 [213]p. (illus. omitted).
Order from OTS or SLA $14.50 61-27990

Trans. of mono. Principles of Geocryology, Moscow, 1959, pt. 1, chaps. 9-11, p. 274-398.

DESCRIPTORS: *Permafrost, Ice, *Hydrology, Rock, Cryogenics, *Geology, Geography, Geophysics.

Contents:
Subsurface ices
Subsurface waters of the territory with "permafrozen" rocks
Cryogenic physico-geological phenomena in districts with perennially frozen rocks.

IONOSPHERIC RESEARCHES. 8 Nov 61 [112]p. 63 refs. JPRS: 10930.
Order from OTS or SLA $9.60 62-13347

Trans. of [Issledovaniya Ionosfery i Meteorov: Sbornik Statei] (USSR) 1960, no. 3, 99p.
##Another trans. of p. 77-82 is available from OTS or SLA $1.60 as 61-28216, CSIRO Trans-5362 [1961] [14]p.

DESCRIPTORS: *Ionosphere, Radio communication systems, Radio waves, Meteorological data, Mathematical analysis, Radio interference, Intensity, Wave transmission, Gas ionization, Solar flares, *Ionospheric disturbances, Analysis, Sounding rockets, Recording devices, Atmospherics, Aurorae, Absorption, Reflection, Distribution, Siberia, *Upper atmosphere.

METEOROLOGY AND HYDROLOGY, 1961, NO. 7: [SELECTED ARTICLES]. 20 Nov 61 [14]p. JPRS: 11200.
Order from OTS or SLA $1.60 62-13520

Trans. of Meteorologiya i Gidrologiya (USSR) 1961, no. 7, p. 52-55 and 58.

DESCRIPTORS: *Meteorology, *Hydrology, *Bibliography, Oceanography

Contents:
Literature on meteorology, hydrology, and oceanography for 1960. II. Articles published in the Journals and periodic issues
Results conference at the Irkutsk Hydrometeorological Observatory, by M. Sh. Furman.

SOIL STUDIES OF COMMUNIST CHINA. 25 Oct 61 [146]p. JPRS: 10682.
Order from OTS or SLA $11.00 62-13008

Trans. of T'u Jang Hsüeh Pao (Chinese People's Republic) 1958, v. 6, no. 1, p. 1-42, 44-52, 54-63, 65-88.

DESCRIPTORS: *Soils, Moisture, Agriculture, Plants, Conferences, Climatic factors, China, Salinity, Geography.

Contents:
Soil moisture problems of the North China area (the mechanism of moisture diffusion in soil and profile impedence to movement of soil moisture) by Feng Chao-lin and Ch'en Ling-ai
Soil studies in the Yellow River valley (genesis and

evolution of the soils of North China Plain) by Hsiung I. and others
The development of soils on the red-colored weathering crust in Georgia and South China, by S. V. Zonn
Vertical distribution and basic characteristics of the soils of Huang Shan, by Tai-Ch'ang-ta and others
A method of improving sand mulch in Kansu, by Lu Chung-shu and others
Study of the hydrometer method of mechanical analysis of soils, by Teng Shih-ch'in and others
Conference report of the 1957 "Roundtable on Experimentation, Research, and Techniques for the Improvement of Saline Soil", by T'an Hsiao-yuan.

Broz, Frantisek, Chudoba, Vratislav and others.
GEODESY IN THE USSR, 23 July 60, 163p. (1 fig. omitted) 95 refs. JPRS: R-164-N.
Order from OTS or SLA $12.00 60-41025

Trans. of mono. Geodesie v SSSR, Prague, 1953, 112p.

DESCRIPTORS: *Geodesics, *Geodetic astronomy, Mapping, Geophysical prospecting, Education.

Contents:
The significance of geodetic work for the progress of the Soviet Union
The organization of geodetic work and of geodetic education in the USSR
Basic geodetic work in the USSR
Triangulation
Geodetic astronomy
Geodetic gravimetry
Leveling
The application of developments in Soviet geodesy to Czechoslovak conditions

Sokolova, E. I., Listova, L. P., and Weinstein, A. Z.
SYNTHESIS OF FERRISILICATES AND FERROSILICATES. [1961] 12p. (3 drawings omitted) 3 refs.
Order from OTS or SLA $1.60 61-15876

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1954, v. 96, no. 6, p. 1225ff.

DESCRIPTORS: Synthesis, Chemical equilibrium, *Silicates, Chlorites, Minerals, Geology, Pressure, Oxides, Solutions, Precipitation, Chemical elements, Chemical analysis, *Ferrites, *Ferromagnetic materials.

Climatology and Meteorology

SHORT-RANGE AND LONG-RANGE WEATHER PREDICTION. 28 Sep 61 [13]p. 8 refs. JPRS: 8959.
Order from OTS or SLA $1.60 61-28553

Trans. of Akademiya Nauk SSSR. Doklady, 1961 [v. 136] no. 1, p. 72-78.

DESCRIPTORS: *Weather forecasting, Air, Velocity, Thermodynamics, Northern hemisphere.

Contents:
The use of a full system of thermodynamic equations for short-range predictions using a two-level model, by Tseng Ch'ing-ts'un
The long-range prediction of anomalies of vertical velocities of air movement over the northern hemisphere, by Sh. A. Musayelyan.

Lebedev, A. A.
A MARINE HYDRO-METEOROLOGICAL AND PRODUCTION BULLETIN, tr. by T. C. Marwick. 1960 [14]p. Trans. no. 41; [DSIR LLU] M. 2725.
Order from OTS or SLA $1.10 61-23340

Trans. of Met[eorologiya i] Gidr[ologiya] (USSR) 1959, no. 5, p. 50.

DESCRIPTORS: *Weather forecasting, Oceanography, Fishes, *Fisheries, *Marine meteorology, Ocean currents, *Hydrology, Ships, Production.

In order to give timely and regular notification to the captains of ships in the fishing industry about changes in the hydrological regions and in the character of the development of synoptic processes, and also about current and anticipated conditions in the industry, the Murmansk Hydro-meteorological Office, together with the Polar Institute for marine fishery economy and oceanography, is publishing a monthly "Marine hydrometeorological and production bulletin." The bulletin is made up of two parts: the first contains surveys of weather and hydrological conditions, the second reviews of the course and conditions of the trawler industry and anticipated conditions in the industry. (Author)

Zakharova, A. F.
RADIATION REGIME OF NORTHERN AND SOUTHERN SLOPES (IN THE USSR) IN RELATION TO GEOGRAPHICAL LATITUDE (Radiatsionnyi Rezhim Severnykh i Yuzhnykh Sklonov v Zavisimosti ot Geograficheskoi Shiroty) tr. by Nina A. Stepanova. July 61 [25]p. 14 refs.
Order from OTS or SLA $2.60 61-27775

Trans. of Leningrad U. Uchenye Zapiski (USSR) 1959, no. 269, p. 24-49.

DESCRIPTORS: Earth, Surfaces, *Thermal radiation, *Weather stations, Climatic factors, Angle of arrival, Sun, Cosmic rays, Wave transmission, Mountains.

The difference in the incidence angle of the sun's rays to slopes is the basic factor controlling the radiation regime of northern and southern slopes of varying steepnesses. These differences are so large that they produce a specific radiation regime on slopes different from the regime for a horizontal surface. In general, this specific regime is equivalent to an azonality of mountain slopes expressed to varying degrees depending on the geographic latitude and the season of the year. Differences in slope exposures may compensate for large differences in latitude with respect to variations in the sums of heat being received. Calculations of the actual sums of heat received on slopes at certain stations in the USSR have shown that actual radiation conditions depend on cloudiness and atmospheric transmission in addition to the other basic factors. The degree of this relationship is determined by geographic location.

Geology

HYDROGEOLOGY AND ENGINEERING GEOLOGY, 1959, NO. 1: SELECTED ARTICLES. 6 Sep 61 [43]p. (8 photos omitted) 19 refs. JPRS: 4951.
Order from OTS or SLA $4.60 61-28575

Trans. of Shui Wen Ti Chih Kung Ch'eng Ti Chih (Chinese People's Republic) 1959, no. 1, p. 17-32.

DESCRIPTORS: *Hydrology, *Geology, China, Geophysical prospecting, Geological survey, Calcite, Inland waterways, Drilling machines, Rotary pumps, Dams, Water, Water supplies, Mathematical prediction, Water tunnels, Geophysics, Disks, Minerals, Coal, Petroleum, China.

Contents:
The origin of brecciated limestone of the Chia Ling River System in the middle and upper Triassic period in southeastern Szechuan, by Ch'ien Hsueh-p'u
Concerning further simplification of "some theoretical and practical questions of combined pumping", by Kao Chung
Methods and principles of forecasting reservoir wall collapse and some reference data, by Sun Kuang-chung
Engineering geology survey of Erh Hai aqueduct tunnels
Geological computation "disc", by Chi Chih-T'ao

HYDROGEOLOGY AND ENGINEERING GEOLOGY, 1959, NO. 10: [SELECTED TRANSLATIONS]. 19 Sep 61 [23]p. 8 refs. JPRS: 4993.
Order from OTS or SLA $2.60 61-28572

Trans. of Shui Wen Ti Chih Kung Ch'eng Ti Chih (Chinese People's Republic) 1959, no. 10, p. 18-21, 23, 28-29.

Portions of this report will not reproduce well.

DESCRIPTORS: *Hydrology, Water, Classification, Chemical analysis, *Geology, Erosion, China, Ions,

Contents:
Suggestions on improving present methods of chemical classification of water, by Kao Ming-te
A new representational formula for chemical analysis of ground water: ion structure formula, by Shen Shu-jung
Rapid method of analysis of the ultimate erosiveness of ground water, by Jao Ch'in-tse.

HYDROGEOLOGY AND ENGINEERING GEOLOGY 1960, NO. 6: SELECTED ARTICLES. 23 Aug 61 [27]p 6 refs. JPRS: 4909.
Order from OTS or SLA $2.60 61-28045

Trans. of Shui Wen Ti Chih Kung Ch'eng Ti Chih (Chinese People's Republic) 1960, no. 6, p. 29-30 and 34-41.

DESCRIPTORS: *Hydrology, Geology, Balances, Density sensitive indicators, Soils, Particles, Water, Surfaces, Recovery, Drilling machines, Permeability, Well logging, Water supplies, China, Geological survey, Geophysical prospecting

Contents:
A rapid method of adjusting the scales of a hydrometer of soil particle analysis
The genesis of the Pai Lang Kou Mineral Spring of Kansu and related problems, by Ts'ai Erh-fen
The regularities of water surface recovery in wells drilled in free water aquifers and their significance to the rapid determination of well discharge and coefficient of permeability, by Liang Chien-t'ang.

Arkhangel'skaya, V. V. and Kats, A. G.
MESOZOIC MAGMATIC ROCKS OF THE EASTERN EDGE OF THE ALDAN SHIELD (Mezozoiskie Magmaticheskie Porody Vostochnoi Okrainy Aldanskogo Shchita). Aug 61[20]p. 11 refs. RTS 1891.
Order from OTS or SLA $1.60 61-27785

Trans. of Sovetskaya Geologiya (USSR) 1959, no. 4, p. 67-82.

DESCRIPTORS: *Rock, Earth, Geology, Age factors, Fracture (Mechanics), Minerals, Mountains, Deposits, Volcanoes, Chemical analysis, Terrestrial magnetism.

A brief survey is made of these rocks on the basis of our work in 1956 on Expedition no. 2 of the Ministry of Geology. Some conclusions are presented, particularly as to the genesis of one of the intrusions (the one of greatest practical interest, which consists mainly of alkali and ultrabasic rocks) and as to the variations in space of the compositions of these rocks. (Author)

Balabushevich, I. A.
ON THE PROBLEM OF THE CLASSIFICATION OF MAGNETIC AND GRAVITY ANOMALIES. [1961] [22]p. 3 refs. ACIC G-12.
Order from OTS or SLA $2.60 61-28843

Trans. of Akademiya Navuk BSSR [Minsk]. Instytut Gealagichnykh Navuk. Trudy, 1958, v. 1, p. 108-118.

DESCRIPTORS: *Geology, Geophysics, Magnetic properties, Magnetism, *Magnetic fields, *Gravity, Classification.

A scheme, first discussed in 1957, for the establishment of a unitary system of classification of magnetic and gravity anomalies which would reflect the geological essence of a given distribution of the respective field elements is discussed. The proposed classification must be similar to the breakdown of geological structures into classes, so that a clearly defined geological meaning may be attributed to each classification order of anomalies. The classification of anomalies must be based on the laws governing the distribution of the field elements and their individual and mutual variations. Support is given to the distinction of S. I. Subbotin (Akad. Nauk SSSR Izvestiya Seriya Geofiz. 1955: 332-338; available in translation from LC or SLA as 60-19012) of fields into "mosaic"

(or random) and "banded" fields among the lower-order field elements. The various types of transitions possible are shown by either type of field and the geological significance of shallow-gradient and steep-gradient patterns of junction and intersection. Examples based on complex intersection patterns in the SW part of the European territory of the USSR are adduced, together with geological interpretation.

Blankov, E. B., Blyumentsev, A. M., and Blankova, T. N.
COMPARATIVE EFFECTIVENESS OF VARIOUS RADIOACTIVE METHODS OF DETERMINING THE POSITION OF THE OIL-WATER CONTACT IN CASED-OFF WELLS [Sravnitel'naya Effektivnost' Razlichnykh Radioaktionykh Metodov Opredeleniya Polozheniya Vodo-Neftyanogo Kontakta v Obsazhennykh Skvazhinakh]. [1961] 7p.
Order from ATS $11.80 ATS-39M45R

Trans. of Razvedochnaya i Promyslovaya Geofizika (USSR) [1958] v. 21, p. 82-90.

DESCRIPTORS: *Well logging, Oils, Water, *Hydrology, *Geophysical prospecting, Radioactivity.

Chirkova-Zalesskaya, E. F.
DIVISION OF THE TERRIGENOUS DEVONIAN OF THE URAL-VOLGA REGION ON THE BASIS OF FOSSIL PLANTS. 7 Apr 60 [217]p. (41 plates omitted) 39 refs.
Order from OTS or SLA $14.50 61-15883

Trans. of mono. Delenie Terrigennogo Devona Uralo-Povolzhya na Osnovanii Tskopaemykh Rastenii, Moscow, 1957, [137p.].

DESCRIPTORS: *Paleoecology, Geology, USSR.

Contents:
Description of the Devonian from the holes in the Ural-Volga Region
Materials on the fossil plants of the Terrigenous Devonian of the Ural-Volga Region.

Chirkova-Zalesskaya, E. F.
PETROLEUM AND GAS CONTENT OF THE URAL-VOLGA PROVINCE. 30 Mar 60, 15p. 9 refs.
Order from OTS or SLA $1.60 61-15893

Trans. of mono. Subdivision of the Terrigenous Devonian of the Ural-Volga Region on the Basis of the Fossil Plants, pub. by Petroleum Inst., Acad. of Sci. USSR, 1956, p. 172-179.

DESCRIPTORS: *Petroleum, *Paleoecology, Geology, *Plants, Sedimentation, Drilling machines, Deposits, *Natural gas, Geochemistry, Geophysical prospecting.

Phytostratigraphic investigations of the Devonian system on the vast territory of the Ural-Volga region and a part of the Russian Platform yielded for the first time complete sections both in marine and continental facies, producing vast material on fossil plants through the entire sequence of terrigenous depostis. (Extracted)

Filimonova, A. B.
COMPLEXES OF SPORES IN THE BOUNDARY LAYERS OF THE MIDDLE AND UPPER DEVONIAN OF THE VOLGA-URAL REGION. [1961] [7]p. 5 refs.
Order from OTS or SLA $1.10 61-15964

Trans. of Akad[emiya] Nauk SSSR. Doklady [1958] v. 119, no. 5, p. 1006-1008.
Another trans. is available from LC or SLA mi$1.80, ph$1.80 as 60-17241, NCB-A1635/SEH [1960] [5]p. and from CB $5.00

DESCRIPTORS: *Geology, *Plants, Paleoecology, Geological survey, *Spores, Age factors, *Pollen, Analysis.

See also 59-14268

Martynova, G. P.
DIVISION OF DEVONIAN DEPOSITS BY OSTRACODES, tr. by C. de Leuchtenberg. 18 Apr 61 [16]p. 8 refs.
Order from OTS or SLA $1.60 61-23965

Trans. of [Vsesoyuznyi Neftyanoi Nauchno-Issledovatel'skii Geologo-Razvedochnyi Institut. Trudy] (USSR) 1959, no. 133, p. 112-120.

DESCRIPTORS: *Crustacea, Deposits, Paleoecology, Geology, Rock, USSR.

Ostracodes were studied from the entire complex of sedimentary rocks, beginning with the old Izhma-Omra deposits and up to Famenian stage inclusively. The oldest ostracode carrying deposits are those of Middle Devonian from the S-E Timan foothills. No ostracodes were found in the region of the Pechora ridge, in Middle Timan and on Ukhta (river). (Author)

Ostrovskii, A. P.
DEEP-HOLE DRILLING WITH EXPLOSIVES. Nov 61, approx. 100p.
Order from CB $17.50

Trans. of unidentified Russian mono., n.p., n.d.

DESCRIPTORS: *Drilling machines, *Explosives, Rock, Shattering, *Well logging, Oils, Coal, *Mining engineering, Petroleum, Solids, Liquids.

Rozhdestvenskaya, A. A.
OSTRACODES OF THE DEVONIAN TERRIGENOUS BED OF THE WESTERN BASHKIRIA AND THEIR STRATIGRAPHIC SIGNIFICANCE. [1961] 137p. (tables omitted) 48 refs.
Order from OTS or SLA $10.50 61-15869

Trans. of unidentified Russian language mono., n.p., n.d.

DESCRIPTORS: *Crustacea, Deposits, Geology, USSR.

Middle Devonian deposits and the lower part of the Frasnian stage of the Western Bashkiria are characterized by several assemblages of ostracodes, on the

basis of which different stratigraphic horizons of the cross-section can be marked with precision. These assemblages are represented by numerous and systematically varied well preserved forms. Apart from well known species, the assemblages include new genera and species, which are responsible for the specific character of the Bashkirian assemblage of ostracodes. Some 54 species of ostracodes, among which 2 genera and 45 species are new, are described. (Author)

Semenenko, N. P.
GEOCHRONOLOGY OF THE PRECAMBRIAN IN ABSOLUTE CHRONOLOGY [Geokhronologiya Dokembriya v Absolyutnom Leto-ischislenii]. [1961] [23]p. (32 refs. omitted).
Order from OTS or SLA $2.60 61-15959

Trans. of #[Akademiya Nauk SSSR. Izvestiya, Seriya Geologicheskaya] 1959 [v. 24] no. 5, p. 3-15.

DESCRIPTORS: Geology, *Age, *Rocks, *Plants, *Geological time, Crystal structure, Lattices.

Senkevich, M.
NEW DATA ON THE FLORA OF THE MIDDLE DEVONIAN OF NORTH KAZAKHSTAN. 1 Apr 60 [7]p. (1 fig. omitted) 1 ref.
Order from OTS or SLA $1.10 61-15880

Trans. of Akademiya Nauk SSSR. Doklady, 1956, v. 106, no. 2, p. 343-344.

DESCRIPTORS: *Geological survey, *Plants, Classification, Geological time.

Senkevich, M. A.
DISCOVERY OF A PRIMITIVE CLUB MOSS IN THE SILURIAN OF KAZAKHSTAN. 5 Dec 60 [12]p. (1 fig. omitted) 4 refs.
Order from OTS or SLA $1.60 61-15891

Trans. of [Akademiya Nauk SSSR. Doklady] 1959, v. 129, no. 1 [p. 187-190].

DESCRIPTORS: Geology, *Paleoecology, *Geological survey, Plants, Animals, *Lichens, Exploration.

Tuzova, L. S.
SPORE-POLLEN COMPLEXES OF THE TERRIGENOUS DEVONIAN AND THE LOWER CARBONIFEROUS OF TARTARY AND THEIR VALUE IN STRATIGRAPHY. 4 Apr 61, 12p. 3 refs.
Order from OTS or SLA $1.60 61-15882

Trans. of unidentified article pub. by Geological Inst., Kazan Branch, Acad. Sci., USSR [Alma Ata, 1956].

DESCRIPTORS: *Paleoecology, Geology, Deposits, Spores, Pollen, USSR.

The study of spore-pollen complexes shows that flourishing and decline of various types of species, to which spores and pollen belong, most frequently encompass the system or stage and less frequently, strata and horizons; within the latter two, changes are usually observed in the quantitative relationship of spores, but the appearance of new species in the constitution of the complexes is not observed. We determined the age of rocks by the spore and pollen complex which characterizes the youngest associations of plants. Preceeding from this consideration, we assigned the Lower-Pashiysk deposits, for example, to the Upper Devonian by the presence of Frasnian forms in them, in spite of the presence of Givetian forms in these formations. The data on spore-pollen analysis show that changes in the flora almost coincide with the changes in the fauna, which fact once more confirms the idea of the oneness of the development of all organic life. (Author)

Zaks, V. N. and Strelkova, S. A., eds.
THE QUATERNARY SEDIMENTS OF THE SOVIET ARCTIC. [1961] 433p. (21 figs. 4 tables omitted) 284 refs.
Order from OTS or SLA $22.25 61-15879

Trans. of [Nauchno-Issledovatel'skii Institut Geologii Arktiki. Trudy] (USSR) 1959, v. 91.

DESCRIPTORS: *Sedimentation, Geological survey, Arctic regions, Franz Josef land, Northwest territories, Siberia, *Mountains, Kara Sea, Bibliography, *Geology, *Inland waterways, *Rock, *Minerals, Mapping, Glaciers, Geophysical prospecting, Geography

Contents:
Introduction, by S. A. Strelkov
Franz Josef Land, by V. D. Dibner
Novaya Zemlya, by N. G. Zagorskaya
Vaigach Island, Yugor Peninsula and the Arctic Urals, by N. G. Zagorskaya
The northern part of the West-Siberian Plain, by V. N. Sokolov
The Taimyr Plain, by I. S. Egorova
The mountainous part of the Taimyr Peninsula and the small island of the Kara Sea, by V. D. Dibner
Severnaya Zemly, by N. G. Zagorskaya
The north-western part of the Central Siberian Plateau, by Ya. I. Pol'kin and S. A. Strelkov
The Anabar Range and the area between the Anabar and Khatanga Rivers, by M. T. Kiryushina
The Olenyok River Basin, the area between the Anabar and Lena Rivers and the northern part of the Vilyuy River Basin, by A. P. Puminov
The Verkhoiansk Range and adjacent plain, by S. A. Strelkov
The Novosibirskie Islands, by N. G. Zagorskaya
Wrangel and Herald Islands, by Z. I. Yashina
Principal conclusions, by S. A. Strelkov
Bibliography.

Oceanography

OCEANOGRAPHY AND LIMNOLOGY, 1959, VOL. 2, NOS. 3-4: SELECTED ARTICLES. 29 Nov 61 [76]p. 39 refs. JPRS: 11367.
Order from OTS or SLA $7.60 62-13674

Trans. of Hai Yang Yu Hu Chao (Chinese People's Republic) 1959, v. 2, no. 3, p. 163-178 and no. 4, p. 244-261, 268-274, 278-282.

DESCRIPTORS: *Oceanography, Periodicals, China, Mollusca, Feeding, Fishes, Algae, Plants, Aquatic animals, Pacific Ocean.

Contents:
The feeding habits of the Ostrea Rivularis Gould, by Chang Hsi and others
On the regional division of the marine algae flora of the western North Pacific. by Ts'eng Ch'eng-k'uei and Chang Hsun-fu
Fauna of economical mollusks of the South China Sea, Chang Hsi and Chi Chung-yen
Notes on the economic fish fauna of the South China Sea, by Ch'eng Ch'ing-t'ai.

Alikhanyan, A., Vaysenberg, A. and others.
MASSENSPEKTREN VON VARITRONEN IN 3250 M HÖHE UBER DEM MEERESSPIEGEL (Spektr Mass Varitronov na Vysote 3250 m Nad Urovnem Morya). [1961] 6p. 6 refs. [DSIR LLU] M2120 (text in German).
Order from OTS or SLA $1.10 61-13619

Trans. in German of Akademiya Nauk SSSR. Doklady, 1948, v. 60, no. 9, p. 1515-1518.

DESCRIPTORS: *Spectrographic analysis, Measurement, Light, Reflection, Oceans, Stratosphere, Upper atmosphere.

Azhazha, V. G.
THE BLUE CURTAIN SEPARATES: THE SCIENTIFIC JOURNEYS OF THE "SEVERYANKA". 17 Oct 61, 17p. (6 figs. omitted). JPRS: 10547.
Order from OTS $0.50 61-31648

Trans. of Priroda (USSR) 1961 [v. 50] no. 7, p. 81-87.

DESCRIPTORS: *Fishes, Food, *Submarines, *Naval research laboratories, *Ocean bottom, *Marine biology, *Underwater object locators, *Sonar equipment.

During two years of operation the research submarine has observed the behavior of various types of food fish at any time of the year; it has checked the operation of catch devices; it has checked the indications of the ultrasonic acoustical fish locating devices. (Extracted)

Duvanin, A. I.
TIDES IN THE SEA: BIBLIOGRAPHY, tr. by M. Slessers. 1961 [12]p. 129 refs. HO Trans-133.
Order from OTS or SLA $1.60 61-28003

Trans. of mono. Prilivi v More, Leningrad, 1960, p. 222-226.

DESCRIPTORS: *Bibliography, *Tides, *Sea water, *Ocean waves.

Mal'tsev, V. N.
THE DISCOVERY OF SUBMERGED HIGHLANDS ON THE SEA BOTTOM OF THE INDIAN OCEAN. [1961] [9]p. (2 plates omitted).
Order from OTS or SLA $1.10 62-13507

Trans. of Sovetskaya Antarkticheskaya Ekspeditsiya. [Informatsionnyi] Byulleten', 1959, no. 4 [p. 43-48].

DESCRIPTORS: *Ocean bottom, *Mountains, Indian Ocean.

There appears to be a line of new underwater upheavals that bears witness to the existence in Cenozoic times of a continental connection of Antarctica to the rest of the continent of the Southern Hemisphere. These formations on the ocean bottom formerly were an expanse of dry land. (Author)

ENGINEERING

THE PROBLEM OF THE MAINTENANCE OF ROUTES IN MADAGASCAR; THE ROUTES AND BRIDGES IN 1956; THE HIGHWAY CONNECTIONS BETWEEN DIEGO-SUAREZ AND THE REGIONS OF THE NORTHEAST COAST (Le Problèms de l'Entretien des Routes à Madagascar; les Routes et Ponts en 1956; les Liaisons Routières entre Diego-Suarez et les Regions de la Côte NE) tr. by E. H. [1959] [10]p. (5 illus. omitted). H-2728.
Order from OTS or SLA $1.10 59-14375

Trans. of excerpts from Chroniques d'Outre Mer. [Etudes et Informations] (France) 1956, Apr and Oct, and from Marches Tropicaux du Monde (France) 1957, 5 Jan.

DESCRIPTORS: *Bridges, Madagascar, Maintenance, *Roads.

REPORTS OF THE ACADEMY OF SCIENCES, UKRAINIAN SSR, 1961, NO. 9: SELECTED TRANSLATIONS. 29 Aug 61 [19]p. JPRS: 8777.
Order from OTS or SLA $1.60 61-28062

Trans. of Akademiya Nauk URSR, Kiev. Dopovidi, 1961, no. 9, p. 1297-1306.

DESCRIPTORS: *Water supplies, Quality control, Coke, Gases, Conferences, Plasticity, *Metals, Blast furnaces, Metallurgy, Sewage, Sanitary engineering, Chemical industry.

Contents:
In the presidium of the Ukrainian Academy of Sciences
Conference on Problems of Protecting Natural Waters and Improving the Quality of Water, by O. V. Sotnikova
Conference on Problems of the Over-all Utilization of Coke Gas, by Ch. M. Meitina
Coordinating Conference on the Problem of the Physical Basis of Strength and Plasticity, by L. V. Kolesov.

Gavrilov, A. N., ed.
INSTRUMENT MAKING AND MEASUREMENT TECHNIQUES. 16 Nov 61 [927]p. 224 refs. JPRS: 11074.
Order from OTS or SLA $33.50 62-13521

Trans. of mono. Priborostroenie i Izmeritel'naya Tekhnika, Moscow, 1960, 463p.

DESCRIPTORS: *Measurement, *Instrumentation, Design, Electronic equipment, Reliability, Friction, Ball bearings, Gyroscopes, Load distribution, Programming, Elasticity, Dies, Forging, Gears, Soldering, Industrial research, Production, Control systems, Vibration, Mathematical analysis, Electromagnets, Ultrasonics, Automation, Wire winding machines, Resistors, Technological intelligence, Tracking, Lathes, Machine tools, Metal forming presses, Calibration, Balances, Milling machines, Nuclear physics, Non-destructive testing, Oscillographs, Frequency, Selection, High temperature research, Surfaces, Precision finishing, Meteorological instruments.

Contents:
Development of domestic instrument manufacturing, by L. I. Loginov
Fundamentals of calculation and design of precision instruments, by I. G. Sarkin
Improvement of dynamic characteristics of the sensing elements by means of feedback, by D. A. Braslavskii and A. M. Yakubovich
Effect of load upon moment of friction in ball bearings used in gyroscopic instruments, by Z. F. Urazaev
Evaluation of the magnitude of backlash in cylindrical gear drives of small modulus used in tracking systems, by N. A. Vykhodtsev
Prerequisites of increasing reliability in magnetoelectric instruments, by M. A. Oykher
Electronic mechanical pickups and their application, by L. A. Goncharskii
The application of program control in instrument manufacture, by A. V. Chernyshev
Increasing accuracy of turning on automatic lathes and extending the area of their application, by A. N. Gavrilov and others
Several methods of facilitating the production of dies in cold forging for instrument making, by S. A. Gantman
Metal cold forging by pressure in small lot series production, by P. D. Ermolaev
The application of ultrasound in instrument making, by V. Kh. Kurnyavko
Methods of calibrating profilometer scales, by A. S. Kruglov
Bases for calculation of milling accuracy in gears of a small module, by V. I. Golikov
New soldering methods in instrument making, by B. A. Maksimikhin
Automation and mechanization of production processes for alternating wire-wound resistors, by A. T. Belevtsev
The application of nuclear radiation in measuring technology, by N. N. Shumilovskii and L. V. Mel'ttser
The present state and problems of developing flaw detection methods, by D. S. Shraiber
Basic trends in the development of analytical instruments, by V. A. Pavlenko
Opticomechanical projection measuring instruments for dimension control, by V. I. Sarkin
Modern methods of measuring vibration, by Yu. I. Iorish
Oscillographic methods for frequency measurements, by A. I. Fyurstenberg
A dynamic method of determining moduli of elasticity at high temperature, by L. G. Etkin
Metrological basis for selecting dimension control methods, by I. M. Komarov-Dunaev.

Jequier, J., Longchambon, L., and Putte, G., van de
GASIFICATION OF COAL FINES BY FLUIDIZATION. [1961] [22]p. (3 figs. omitted) 3 refs.
Order from SLA $2.60 61-20087

Trans. of Chimie et Industrie (France) 1960, v. 83, Apr. p. 541-548.

DESCRIPTORS: Mining engineering, Production, *Coal Fluidized solids, Gases

Progress realized in the mechanization of mines results in an increase in the production of fines. Since their price is lower than that of lump coal, the authors have attempted to develop a gasification process resulting in an increased yield (fluidization). The quality of the gas obtained depends especially on the gasification temperature (950 to 1350°C) and on the thickness of the fluidized bed. The tests in a pilot gas generator appear conclusive and can serve as a base for an industrial installation. (Author)

Waas, Heinrich.
ICEBREAKERS WITH PITCHING EQUIPMENT.
Feb 60 [8]p. 6 refs. Bureau of Ships trans. no. 699.
Order from OTS or SLA $1.10 60-17396

Trans. of V[erein] D[eutscher] I[ngenieure]. Zeitschrift (West Germany) 1959, v. 101, no. 32, p. 1499-1502.

DESCRIPTORS: *Icebreakers, Design, Pitch, Tests.

Aeronautical Engineering

Jarry, Jules and Roy, Maurice.
FRENCH AVIATION, ITS PROGRESS AND ITS TECHNICAL PROBLEMS [AND] CONTRIBUTION OF AERONAUTIC RESEARCH TO PROGRESS IN AVIATION. [1959] 64p. F-TS-9261/V.
Order from OTS or SLA $6.60 59-16065

Trans. of Technique et Science Aéronautiques (France) 1957 [no.] 2, p. 49-79.

DESCRIPTORS: *Aeronautics, France, History, Aircraft, Supersonic planes, *Guided missiles, Aerodynamics, Catapults, Design, Airplane engines, Rocket motors, Nuclear propulsion, *Civil aviation, Supersonics, Thrust, Short take-off planes, Vertical take-off planes.

Lukyanov, B. M.
ON THE CALCULATION OF HIGH PRESSURE BALLOONS. 1 Sep 61 [14]p. 4 refs. MCL-1167/1+2.
Order from OTS or SLA $1.60 61-28502

Unedited rough draft trans. of Izvestiya Vysshikh Uchebnykh Zavedenii. Aviatsionnaya Tekhnika (USSR) 1959, no. 1, p. 125-133.

DESCRIPTORS: *Balloons, Pneumatic devices, *High pressure research, Mathematical analysis.

The general case is discussed for the determination of stresses in the wall of cylindrical balloons for compressed gases, and in the wire winding, possessing cylindrical anisotropies. The effect of axial stretching on the cylinder's wall, at the expense of gas pressure on the bottom of the balloon, is calculated. It is assumed that every layer is orthotropic, upon which the anisotropic terminals are located on the cylinder's axis. Theoretical conclusions for a particular case regarding stresses on the surface of the cylinder's internal wall are compared with experimental data. All the reasonings, strictly speaking, are justified for the balloon's cylindrical section, where the rim effect seems to be insignificant. (Author)

Chemical Engineering

CHEMISTRY: USSR. 27 Sep 61 [32]p. JPRS: 10272.
Order from OTS or SLA $3.60 62-13040

Trans. of Masloboino-Zhirovaya Promyshlennost' (USSR) 1961, v. 27, no. 5, p. 1-17.

DESCRIPTORS: *Chemistry, Chemical engineering, Fats, Oils, Fatty acids, Processing, Soaps, Production, Refineries, *Chemical industry, Industrial production.

Contents:
A fitting welcome for the 22nd Congress of the CPSU
At the exposition of the achievements of the national economy, by L. N. Demin and N. R. Seliverstov
Notes on planning, by I. M. Tovbin.

Domange, Louis.
APPARATUS FOR INVESTIGATING A SYSTEM COMPRISING A LIQUID AND SOLID PHASE (Appareil pour l'Étude des Systèmes Comportant une Phase Liquide et une Phase Solide). [1959] 3p. (1 diagr. omitted).
Order from OTS or SLA $1.10 59-18564

Trans. of Société Chimique de France. Bulletin, 1939, v. 6, p. 1255-1257.

DESCRIPTORS: *Laboratory equipment, Design, *Phase studies, Instrumentation, Liquids, Solids.

Isaenko, I. P. and Markacheva, T. M.
A NEW METHOD OF OBTAINING PURE ANTHRACENE AND CARBAZOLE [Novyi Sposob Polucheniya Chistykh Antratsena i Karbazola]. [1961] 9p. 1 ref.
Order from OTS or SLA $1.10 61-20850

Trans. of Koks i Khimiya (USSR) 1958, no. 12, p. 35-41.
Another trans. is available from LC or SLA mi$2.40, ph$3.30 as 60-13677, CTRA TN-65, 24 Apr 59 [14]p.

DESCRIPTORS: *Anthracenes, *Carbazoles, Separation, *Coal tar, Processing.

For abstract see Technical Translations 4: 28, 1960.

Kandalov, I. I.
ORGANIZATION OF THE CONSTRUCTION OF HYDROELECTRIC STATIONS. 6 Nov 61 [5]p. JPRS: 11002.
Order from OTS or SLA $1.10 62-13349

Trans. of Gidrotekhnicheskoe Stroitel'stvo (USSR) 1961 [v. 31] no. 2, p. 64-65.

DESCRIPTORS: *Hydroelectric power systems, *Construction, Thermoelectricity, Transportation, Concrete, Foundations (Structures), Reinforced concrete, High altitude, Automation, Electrical engineering.

Kelemen, S.
THE MECHANISM OF OIL PRODUCTION IN CAVERNOUS LIMESTONE RESERVOIRS. [1961] 9p.
Order from ATS $12.00 ATS-14N54G

Trans. of Bergbau-Kongress Budapest 1960, no. 31, 3-19 [sic].

DESCRIPTORS: *Oils, Production, *Calcite.

Korneev, Y. and Skoblo, A.
THE EFFECT OF PRESSURE ON RELATIVE VOLATILITY IN PROCESSES OF EXTRACTIVE DISTILLATION. [1961] 9p.
Order from ATS $10.75 ATS-41N57R

Trans. of Izvest[iya] Vysshikh Ucheb[nykh] Zavedenii. Neft' i Gaz (USSR) 1958, v. 1, no. 7, p. 57-65.

DESCRIPTORS: Pressure, Evaporation, *Petroleum.

Potashnikov, M. M.
MAKING TECHNICAL NAPHTHALENE BY FRACTIONATING NAPHTHALENE FRACTION. [1961] 8p.
Order from OTS or SLA $1.10 61-20925

Trans. of Koks i Khimiya (USSR) 1956, no. 6, p. 46-49.

DESCRIPTORS: *Naphthalenes, *Fractionation, Crystallization, Production, Chemical analysis, Chemical industry, Coal tar, Purification, Melting, Distilling plants.

Yakimenko, L. M.
SCIENTIFIC AND TECHNICAL CONFERENCE ON TECHNIQUES OF PRODUCTION OF CHLORINE AND CAUSTIC SODA. 23 Oct 61 [6]p. JPRS: 10794.
Order from OTS or SLA $1.10 62-13240

Trans. of Vsesoyuznoe Khimicheskoe Obshchestvo. Zhurnal (USSR) [1960] v. 5, no. 6, p. 699-701.

DESCRIPTORS: Conferences, Scientific research, Manufacturing methods, *Chlorine, *Sodium compounds, Hydroxides, Electrochemistry.

Weber, E. and Bruchhäuser, W.
METHODS OF EXTRACTING DUST FROM GASES, PTS. 1-3. [1961].
Order from BISI $ 10 BISI-2412

Trans. of Aufbereitungs-Technik (West Germany) 1960 [v. 1] Oct, p. 429-435; Dec, p. 518-527; 1961 [v. 2] June, p. 241-249.

DESCRIPTORS: *Gases, *Cleaning, Electrostatic precipitation, Particles, Separation, Industrial plants.

Electrical and Electronic Engineering

CIRCUIT ARRANGEMENT FOR THE SUPPRESSION OF NOISE IN TELEVISION RECEIVERS. [1961] 7p.
Order from ATS $8.75 ATS-38N57G

Trans. of German patent application T-16186, file no. W2095, by Telefunken G. m. b. H., n. d.

DESCRIPTORS: *Television receivers, *Circuits, Noise, Suppressors.

NEWS OF HIGHER EDUCATIONAL INSTITUTIONS, MINISTRY OF HIGHER AND SECONDARY SPECIALIZED EDUCATION, RADIO ENGINEERING SERIES, 1961, VOL. 4, NO. 2. 20 Nov 61 [163]p. JPRS: 11075.
Order from OTS or SLA $12.00 62-13402

Trans. of Izvestiya Vysshikh Uchebnykh Zavedenii. Radiotekhnika (USSR) 1961, v. 4, no. 2, p. 127-236.

DESCRIPTORS: *Radio equipment, *Electronic equipment, *Electronic engineering, Periodicals, USSR, Ferrites, Cavity resonators, Metals, Cylindrical bodies, Dielectrics, Excitation, Electron beams, Resonance, Amplifiers, Semiconductors, Diodes, Delay lines, Signals, Numerical analysis, Integrals, Klystrons, Frequency, Audiofrequency, Power amplifiers, Traveling wave tubes, Data storage systems, Errors, Transistors, Detectors, Pulse generators, Generators, Feedback, Education, Great Britain

Contents:
Transmission factors in ferrite resonant-cavity devices, by Yu. E. Lavrenko
Concentrated excitation of a metal cylinder covered with a dielectric, by M. S. Bobrovnikov and R. P. Starovotov
Incoherent storage with an exponential weighting function, by Yu. S. Lezin
Electron beam in a coaxial spiral line with an anisotropic magnetodielectric medium, by V. P. Shestopalov and others
A radio pulse logarithmic resonance amplifier, by V. M. Vokov and B. P. Khizhinskii
Transient characteristics of a semiconductor junction-type diode, by I. P. Stepanenko
Principles of spiral elliptical delay line theory, by V. S. Brykov
An analog of the Duhamel integral for signals with a limited spectrum, by N. I. Kaushanskii
Kinematic theory of forming very short bunches of electrons with bunchers of the klystron type, by D. A. Yakovlev
A pulse power amplifier for audio frequencies, by V. V. Malanov and others
Correction of the resistance variations in wire by means of stretching, by G. L. Smilyanskii
Lengthwise waves in a straight waveguide of stepped cross section, by A. Ya. Yashkin
Calculation of the gain of a sectional traveling-wave tube, by A. I. Denisov
Correction of the storage error of an analog magnetic storage device, by B. V. Bolotov and V. M. Zakharov
Detection of AM and FM signals in terms of slope of the high-frequency oscillations, by A. A. Gorbachev and V. D. Krasil'nikov
A transistor detector with a composite output load, by Ya. K. Trokhimenko
A pulse generator with nonlinear feedback, by L. S. Bartenev
Dependence of the frequency of a reflection klystron on the heater voltage, by P. A. Bakulev
Higher technical education in Great Britain, by A. I. Petrenko

Barkan, A. Z. and Kudryashev, A. S.
MÉTHODE DE STABILISATION DE LA SENSIBILITÉ DU SYSTÈME AMPLIFICATEURS-PHOTOÉLEMENT D'UN COMPTEUR A SCINTILLATIONS [A Sensitivity-Stabilization Method for the Photocell-Amplifier System of a Scintillation Counter] tr. by Tarassenko. 20 Feb 61 [4]p. CEA Trans. no. R 1236 (text in French).
Order from OTS or SLA $1.10 61-28805

Trans. in French of #Byulleten' Izobretenii (USSR) 1959, no. 23 [p. 36] (Russian patent 124 554, 1 June 57).

DESCRIPTORS: *Scintillation counters, *Amplifiers, *Photoelectric cells, Sensitivity, Stabilization, Automatic control.

To make measurements more exact, the measured pulses are subjected to the standard luminous flux. The corresponding transient photocell voltage is for automatic regulation of the counter's amplifier.

Koptev, O. I., Panov, A. P., and Maslov, G. V.
AN INTEGRATING DEVICE. 3 Oct 61 [3]p.
MCL-1200/1+2. AD-265 690
Order from OTS or SLA $1.10 61-28978

Unedited rough draft trans. from #Byulleten' Izobretenii (USSR) 1960, no. 15, p. 60.

DESCRIPTORS: *Pulse integrators, Integrators, Design.

This is a device utilizing diodes and fitted with a proportioning capacitor. It has the following special feature: to boost the output current and eliminate the effects of instability of the input pulse amplitude, it contains a silicon stabilitron tube connected in parallel to the proportioning capacitor. (Author)

OTS SB-444 $0.10

Office of Technical Services, Dept. of Commerce, Washington, D. C.
ELECTRONIC MINIATURIZATION (SUPPLEMENT TO CTR-250). Dec 61, 14p. 158 refs. OTS Selective Bibliography SB-444.

DESCRIPTORS: *Miniature electronic equipment, *Subminiature electronic equipment, Patents, Industrial production, Electron beams, Machining, Ultrasonics, Grinders, Thin films, Electronic circuits, Bibliography, Reliability, Printed circuits, Temperature, Electrical engineering.

Lists 158 foreign and domestic references added to the OTS collection during the period 1958 to December 1961. Reports are listed in the following categories: Micro-Modules, Microminiaturization, Microelectronics, Subminiaturization, Miniaturization and Government-owned Patents. Research covers Micro-Module production programs; resistor, diode, and capacitor microelements; electron-beam-activated machining in microelectronics; ultrasonic grinding techniques in microminiaturization; thin film circuits; reliability and environmental testing; high temperature printed subminiature circuits; microjunction formation technology among other subjects.

Pokrovskii, V. L.
GENERAL METHOD OF SEEKING THE OPTIMUM DISTRIBUTION FOR LINEAR ANTENNAS. [1961] 4p. 3 refs. MDF P-171; AFCRL-590; AD-262 526.
Order from OTS or SLA $1.10 62-13632

Trans. of A[kademiya] N[auk] SSSR. Doklady, 1961, v. 138, no. 3, p. 584-586.

DESCRIPTORS: *Antennas, Linear systems, Antenna radiation patterns, Lobing, Fourier analysis, Series, Mathematical analysis.

Not only discrete but also continuous current distributions without singularities can be analyzed in such a general formulation if they are prescribed in the form of finite Fourier sums. (Author)

Timofeev, B. B. and Arutyunov, G. K.
AN ELECTRONIC SELF-TUNING TWO PARAMETER SERVOSYSTEM FOR THE INVESTIGATION OF VARIOUS PHYSICAL PARAMETERS. 3 Oct 61 [5]p.
MCL-1311/1+2. AD-265 716
Order from OTS or SLA $1.10 61-28987

Unedited rough draft trans. from #Byulleten' Izobretenii (USSR) 1960, no. 15.

DESCRIPTORS: *Electronic equipment, *Servo systems, Design.

This electronic self-tuning two-parameter servosystem for investigating various physical processes contains a transducer which linearly converts changes in the investigated physical process into changes of electric voltage. It has the special feature that, in order to determine (predict) the limit (asymptote) to which the investigated physical process tends, before its termination, it uses an electronic analog of the function which is the quotient which results from dividing the time-dependence of the investigated process by the equation of the asymptote. The voltage at the analog input, one of the system parameters, is maintained such that the voltage at its output is equal (on a chosen scale) to the voltage at the transducer output. The analog is controlled with a control unit that changes one of the analog parameters (the second parameter of the system) until it corresponds to the investigated physical process. (Author)

Vol'pert, A. R.
ON THE PHASE CENTER OF ANTENNAS. [1961] 13p. 1 ref. MDF V-159; AFCRL-580; AD-262 522.
Order from OTS or SLA $1.60 62-13633

Trans. of #Radiotekh[nika] (USSR) 1961, v. 16, no. 3, p. 3-12.

DESCRIPTORS: *Antennas, Phase measurement, Antenna radiation patterns, Mathematical analysis, *Dipole antennas.

An analytic form of the phase diagram is established for which antennas have a phase center. The properties of antennas without a phase center are analyzed. Simple examples are presented of discrete and linear antennas to which more complex structures can be reduced. (Author)

Zimmermann, G.
DEVICE FOR ELECTROMAGNETIC RECORDING. [1961] 7p.
Order from ATS $15.75 ATS-78N57G

Trans. of German patent 895,063, pat. from 2 Oct 48 onward, appl. opened for public inspection 23 Nov 50, granted 17 Sep 53, pub 29 Oct 53.

DESCRIPTORS: *Electronic recording systems, *Magnetic recording systems, Recording systems.

HEAT POWER ENGINEERING, 1959, NO. 1. Dec 61, 178p. 51 refs.
Order from OTS $2.75 AEC-tr-4496

Trans. of Teploenergetika (USSR) 1959, no. 1.

DESCRIPTORS: *Water, *Steam power plants, *Power, Engineering, Fluid flow, Gases, Bubbles, Liquids, Mixtures, Pressure, Thermal radiation, Temperature, Combustion chambers, Boilers, Steam pipes, Heat exchangers, Heat transfer, Electric furnaces, Mechanical engineering, Integral equations.

Contents:
Generalization of experimental data on the circulation of water in steam boilers, by G. E. Kholodovskii
Regions of forms of flow of a stream-water mixture in an inclined pipe, by B. I. Sheinin and A. K. Katarzhis
Experimental investigation of steam and gas content during the bubbling process, by G. G. Bartolomei and others
Pressure pulsations during the flow of gas-liquid mixtures in pipes, by N. I. Semenov
Investigation of the flow of a steam-water mixture in pipes by the method of γ-irradiation, by Z. L. Miropol'skii and R. I. Shneerova
Temperature field in combustion chambers, by B. A. Khrustalev and S. S. Filimonov
Steam boiler of a solar heat power station, by D. M. Shchegolev
Investigation of radiant heat exchange in gray-body systems, by Yu. A. Surinov
Use of the method of indefinite coefficients in the solution of nonlinear problems of mathematical physics, by A. S. Pleshanov.

SAFETY DEVICE FOR OIL OR GAS FURNACE OPERATION. [1961] 3p.
Order from OTS or SLA $1.10 61-18356

Trans. of Belgian patent 540 449, by Siemens and Halske G. m. b. H., 9 Aug 55 (Internat'l Convention: Priority of appl. A 4521/54 (Reg. 6039) filed in Austria 12 Aug 54).

DESCRIPTORS: *Safety devices, Fuels, Combustion, Air, Oil burners, *Oil burning furnaces, *Heating plants, Combustion chamber gases.

The system compares the quantity of fuel supplied to the site of combustion and the quantity of air furnished. It acts on one or more mechanisms designed to shut off the arrival of fuel and/or air when the two/quantities show a ratio such that the operation of the furnace is endangered. As the comparison system, use is made of the flowmeters of an automatic air-fuel mixture self-regulator which controls the furnace.

Krause, H. G. L.
THE SECULAR AND PERIODIC PERTURBATIONS OF THE ORBIT OF AN ARTIFICIAL EARTH SATELLITE, tr. by Seymour Nelson. [1960] [60]p. 25 refs.
Order from OTS or SLA $5.60 60-17358

Trans. of mono. International Astronautic Congress (no. 7) [held at] Rome, 17-22 Sep 56. [Proceedings, p. 523-585].

DESCRIPTORS: Perturbation theory, *Orbital flight paths, Satellite vehicle trajectories, *Satellite vehicles, Artificial planetoids, Earth, Gravity, Sun, Moon, Motion, Atmosphere, Life expectancy, Velocity Numerical analysis, Bessel functions.

The motion of an earth satellite in an orbit inclined to the earth's equator is generally investigated, the orbit of this satellite being disturbed by the oblateness of earth, by the sun and the moon, and finally by the atmosphere of the earth. For a selected orbit of the earth satellite, it is shown numerically which secular and periodic perturbations are the most important. Furthermore, for a nonstationary orbit, where the atmospheric resistance has still relatively great influence, an analytic formula is developed for the computation of the lifetime of the satellite. Numerical values for this lifetime are in fairly good agreement with other estimations. (Author)

Kurnosova, L. V., ed.
ARTIFICIAL EARTH SATELLITES, VOL. 6 [1962] 176p.
Order from PLP $7.50

Trans. of mono. [Iskusstvennye Sputniki Zemli] Moscow, 1961.

DESCRIPTORS: *Satellite vehicles, Satellite vehicle research.

Leonidov, K.
LAUNCHING LUNAR ROCKETS. 6 Nov 61 [6]p. JPRS: 11003.
Order from OTS or SLA $1.10 62-13340

Trans. from Izvestiya (USSR) 1961, 13 Sep, p. 6.

Descriptors: *Lunar probes, *Rockets, *Launching.

Nikolaev, M. N.
THE ANTI-MISSILE MISSILE. 25 Oct 61, 105p. 8 refs. JPRS: 10614.
Order from OTS $2.50 61-31686

Trans. of mono. Snaryad Protiv Snaryada, Moscow, 1960, 147p.

DESCRIPTORS: *Rocket flight, *Guided missiles, *Surface-to-surface, *Ballistics, Interception, Control, Detection, Hypervelocity vehicles, *Flight paths, *Satellite vehicle trajectories, Infrared tracking, Optical tracking, Radar tracking.

Contents:
Ballistic missiles
The flight of a ballistic rocket
Long-range detection of ballistic rockets
Missile against missile
Interception control.

Sanitation and Safety Engineering

Erdmann, H.
ENGINE EXHAUST GASES AND TOXICOLOGY. Rept. on Non-Contamination of the Atmosphere, Meeting, Sep 60. [1961] [7]p. 2 refs.
Order from SLA $1.10 61-20084

Trans. of ATZ [Automobiltechnische Zeitschrift] (Germany) 1960, v. 62, no. 12, p. 325-326.

DESCRIPTORS: *Exhaust gases, *Toxicity, Poisonous gases, Vehicles, *Contamination, Atmosphere, *Internal combustion engines, *Carbon compounds, *Monoxides, *Diesel engines, Public health, Fuels, Gasoline, Fuel oil, Smokes.

Mikat, B.
THE FEDERAL STATISTICS ON VIOLENT DEATHS, WITH SPECIAL CONSIDERATION OF TRAFFIC DEATHS (Die Bundesstatistik der Gewaltsamon Todesfalle under Besonderer Berucksichtigung des Todes im Verkehr) tr. by W. H. Everhardy. 21 Oct 58, 14p. (3 figs. omitted) 6 refs.
Order from OTS or SLA $1.60 59-12431

Trans. of Hefte z[ur] Unfallheilk[unde] (Germany) 1956, no. 55, p. 14-24.

DESCRIPTORS: *Vital statistics, *Traffic, *Motor accidents, Statistics.

Offhaus, K.
POSSIBILITIES OF PURIFYING DOMESTIC WASTES OF SMALLER COMMUNITIES WITH THE HELP OF OXIDATION DITCHES (Möglichkeiten der Reinigung Häuslicher Abwässer Kleinerer Gemeinden mit Hilfe des Oxydationsgrabens). [1961] [32]p. 3 refs.
Order from SLA $3.60 61-20421

Trans. of Münchner Beiträge zur Abwasser, Fischerei- und Flussbiologie (West Germany) 1958, v. 5, p. 193-209.

DESCRIPTORS: Purification, *Water supplies, Oxygen, *Sewage, *Sanitary engineering, *Drainage, *Disposal

Results of the summer investigations at the oxidation ditch in Nittenau indicated that it is possible to purify the wastes from smaller communities (up to 2000 inhabitants) with the help of the oxidation ditch after TNO-Passavant without preliminary mechanical clarification. (Author)

Shabad, L. M. and Dikun, P. P.
ATMOSPHERIC POLLUTION BY THE CARCINOGENIC SUBSTANCE 3, 4-BENZPYRENE: PT. A, tr. by B. Haigh. Dec 60 [164]p. 324 refs.
Order from OTS or SLA $12.00 61-15623-1

Trans. of mono. Zagryaznenie Atmosfernogo Vozdukha Kantserogennym Veshchestvom 3, 4-Benzpirenom, Leningrad, 1959, contents, chaps. 5 and 8 and refs.

DESCRIPTORS: *Neoplasms, *Lungs, *Hydrocarbons, Air, *Atmosphere, *Cancer research, *Contamination, Public health, *Benzopyrenes.

Contents:
The presence of 3, 4-benzpyrene in polluted atmospheric air
Some conclusions and discussion.

Shabad, L. M. and Dikun, P. P.
ATMOSPHERIC POLLUTION BY THE CARCINOGENIC SUBSTANCE 3, 4-BENZPYRENE: PT. 2, tr. by B. Haigh. Dec 60 [200]p.
Order from OTS or SLA $13.50 61-15623-2

Trans. of mono. Zagryaznenie Atmosfernogo Vozdukha Kantserogennym Veshchestvom 3, 4-Benzipirenom, Leningrad, 1959, chaps. 1-4, 6-7.

DESCRIPTORS: *Neoplasms, *Lungs, *Hydrocarbons, Air, *Cancer research, Contamination, Public health, *Atmosphere, *Benzopyrenes.

Contents:
The increasing incidence of carcinoma of the lung
Carcinogenic substance and cancer in man
Carcinogenic hydrocarbons: 3, 4-Benzpyrene
The technique of studying the pollution of the atmosphere with carcinogenic compounds
Sources of entry of 3, 4-benzpyrene into the atmosphere and the principles of prevention of its action on man
Some examples of the successful prevention of pollution of the air by 3, 4-benzpyrene.

Willich, J. H.
LEGISLATION IN THE U. S. A. AGAINST HARMFUL AUTOMOBILE EXHAUST GASES. [1961] [7]p. 1 ref.
Order from SLA $1.10 61-20082

Trans. of ATZ [Automobiltechnische Zeitschrift] (Germany) 1960, v. 62, no. 12, p. 328-329.

DESCRIPTORS: *Political science, *Exhaust gases, *Carbon compounds, Monoxides, Hydrocarbons, *Atmosphere, *Contamination, Physiology, Purification, Public health, Fuels, Vehicles, Diesel engines, Smokes, Vehicles.

FOOD, HANDLING, AND PACKAGING EQUIPMENT

Gakichko, S. I. and Borodin, V. D.
THE THAWING OF BLOCKS OF SMALL FISH.
Dec 61 [28]p. 19 refs. RTS 1943.
Order from OTS or SLA $2.60 62-13735

Trans. of mono. Razmorazhivanie Blokov Melkoi Ryby, pub. by Gostorgizdat, 1959.

DESCRIPTORS: *Frozen food, *Fishes, Freezing, *Processing, Preservation, *Food, Irrigation systems.

It is recommended that blocks of small fish are defrosted by an irrigation method. This reduces the time required for defrosting by a factor of 1.5-4.5 as compared with immersion methods and simplifies the process of separating thawed fish from the block and from each other. Moreover, irrigation methods obviate the possibility of defrosted fish being of variable quality. The reduction in time required for defrosting and the consequent shorter period during which the fish are in contact with water results in less swelling of their tissues and less extraction of nitrogenous material, all of which tends to preserve their quality. Experimental results obtained with a pilot apparatus indicate an output of 600 kg/hr from an industrial project involving a similar irrigation defroster. (Author)

MACHINERY, FABRICATION, AND ACCESSORY EQUIPMENT

DRILLING, MILLING AND BORING UNIT WITH TAPE CONTROL DRIVE AND AUTOMATIC TOOL CHANGE. [1961] 3p.
Order from STT $1.00 STT-122-97

Trans. of Machine Moderne (France) 1960 [v. 54] Dec, p. 24.

DESCRIPTORS: *Drilling machines, *Milling machines, Machines, Design, Automation.

NEWS OF UKRAINIAN ACADEMY OF SCIENCES.
28 June 61 [25]p. JPRS: 4733.
Order from OTS or SLA $2.60 61-27075

Trans. of Akademiya Nauk URSR, Kiev. Dopovidi, 1960, no. 7, p. 984-995.

DESCRIPTORS: *Machines, *Machine tools, *Machine tool industry, *Plastics, *Fuels, Industrial research, Manufacturing methods.

Contents:
The news of the Praesidium of the Academy of Sciences of the Ukrainian Socialist Soviet Republic
The All-Republic Scientific Technical Conference on the Problems of the Use of Plastics in Machine and Tool Construction (no. 1) by V. F. Yatsenko
(Machinery, Fabrications and Accessory Equipment,
Coordinating council on the problems of diversified exploitation of fuel and energetic resources of the Ukrainian SSR, by Ch. Meitin.

Fleischer, C. and Gnilke, W.
OPTIMUM RATING FOR RADIAL SLIDE OR COMMON BEARINGS. [1961] 32p.
Order from STT $15.00 STT-145-317

Trans. of Maschinenbautechnik (Germany) 1960, v. 9, no. 9, p. 477-487.

DESCRIPTORS: *Bearings, Standards.

Kukhtenko, A. I.
ON ONE CLASS OF MECHANISMS WITH NONHOLONOMIC CONSTRAINTS. 4 Aug 60 [51]p. 2 refs.
Order from OTS or SLA $5.60 61-18802

Trans. of Russian language mono. Seminar on the Theory of Machines and Mechanisms, n. p., 1958, p. 46-70.

DESCRIPTORS: *Machine tools, *Cutting tools, *Milling machines, Automatic, *Control systems, *Servomechanisms, Numerical methods and procedures, Mechanics, Gears, Differentials, Calculus of variations.

Methods are summarized for handling systems with nonholonomic constraints and these are applied to a number of examples from the machine control field.

Rebel'skii, A. V.
EVOLUTION OF HOT STAMPING PROCESSES.
4 Oct 61 [33]p. (8 figs. omitted) 11 refs. MCL-1248
Order from OTS or SLA $3.60 62-13174

Unedited rough draft trans. of #Vestnik Mashinostroeniya (USSR) 1961 [v. 41] no. 2, p. 37-45.

DESCRIPTORS: *Metal forming presses, Forge presses, *Dies, Design, Forging.

Zuchau, H. and Klische, S.
A NUMBER OF EXAMPLES FOR THE USE OF EPOXIDE RESINS IN THE CONSTRUCTION OF FLOW MACHINES. [1961] 15p.
Order from STT $6.00 STT-151-601

Trans. of Maschinenbautechnik (Germany) 1961, v. 10, no. 2, p. 61-65.

DESCRIPTORS: *Epoxides, Epoxy resins, Machines, Construction, Resins.

Engines and Propulsion Systems

OPERATING CYCLES IN HEAT ENGINES (Rabochie Protsessy v Teplovykh Dvigatel'nykh Ustanovkakh). 13 Sep 61 [331]p. 74 refs. MCL-1173.
Order from OTS or SLA $19.75 62-13568

Unedited rough draft trans. of [Aviatsionnyi Institut, Moscow. Trudy] (USSR) 1960, v. 119, 174p.
A trans. of p. 162-173 is available from OTS or SLA $1.60 as 61-28377, MCL-1040, 4 Aug 61 [19]p.

DESCRIPTORS: *Heat engines, Combustion, Mixtures, Model tests, *Electric arcs, Distribution, Liquids, Sprays, Impingers, Jets, Atomization, Axially symmetric flow, Vibration, Pipes, Fluid flow, Gas cylinders, Heat, Liquid rocket propellants, Rocket motors, Rocket fuels, Cooling, Turbine blades, Thermodynamics, Gas turbine regenerators, Gas diffusion, *Gas turbines, Turbojet engines, Mathematical analysis

Contents:
Transient combustion processes in engines, by D. I. Abugov
High-temperature, high-power stabilized electric arcs (electric arc plasmotrons), by V. B. Tikhonov and E. A. Yakovlev
Distribution of liquid in a spray with impinging jets, by I. G. Panevin
On atomizing liquids by sprayers with impinging jets, by I. G. Panevin
Investigation of the spreading over a wall of an axially symmetrical jet, by V. A. Kurochkin
Experimental investigation of the effect of vibration of pipes on the parameters of the liquid flowing in them, by L. A. Latyshev and others
Regeneration of heat in liquid propellant rocket engines, by A. V. Kvasnikov
Cooling of short working turbine blades by means of heat removal to the cooled root, by A. F. Shtyrlin
On the possibility of utilizing binary compounds for model study of turbines, by V. M. Tyugin.

Albrecht, D.
THE FIRST 100 MW TURBO SET IN THE GERMAN DEMOCRATIC REPUBLIC (EASTERN GERMANY). [1961] 10p.
Order from STT $4.00 STT-127-315

Trans. of Maschinenbautechnik (Germany) 1960, v. 9, no. 9, p. 452-456.

DESCRIPTORS: *Turbines, Design, East Germany.

Novik, A. A.
PHOSPHATE COATING AS A METHOD FOR IMPROVED RUNNING-IN OF MACHINE ELEMENTS. [1961] 1300 words.
Order from HB $2.90 HB-3904

Trans. of Vestnik Mashinostroeniya (USSR) 1956, v. 36, no. 7, p. 63-64.
Another trans. is available from HB $4.40 as HB-4932, Apr/May 61, 1500 words.

DESCRIPTORS: Engine cylinders, Pistons, Bushings, Sliding contacts, *Friction, Countermeasures, *Phosphate coatings, Coatings, Effectiveness.

Yasinskii, S. Ya.
A FRICTION TURBINE. 3 Oct 61 [3]p.
MCL-1110/1+2. AD-265 684
Order from OTS or SLA $1.10 61-28981

Unedited rough draft trans. of #Byulleten' Izobretenii (USSR) 1960, no. 9, p. 56.

DESCRIPTORS: Gas turbines, *Turbines, Friction, Design, Operation.

In the proposed friction turbine, in order to increase the efficiency and reduce its weight and dimensions, the effective friction surfaces are formed by deflected bands fixed between two discs. This assures gas flow along optimum trajectories. (Extract)

Manufacturing Equipment and Processes

Kolenda, B. G.
ELECTROMAGNETIC METHOD FOR WELD INSPECTION, CHAPS. 3 (PART)-6. Oct 61.
Order from BISI £7 BISI-2264

Trans. of unidentified mono. pub. Leningrad, SUDPROMGIZ, 1959, p. 29-55.

DESCRIPTORS: *Welds, *Electromagnetism *Magnetic detectors, Test methods, Construction Instruction manuals, Welding fluxes, Electric welding.

Contents:
The electromagnetic method
Construction of the electromagnetic detector MD-138
Instructions for using the electromagnetic detector
Efficiency obtained from using the electromagnetic method.

Korolev, A. V.
CONFERENCE ON NEW TECHNOLOGICAL PROCESSES OF METAL -WORKING BY MEANS OF PRESSURE IN MACHINE BUILDING. 13 Oct 61 [9]p.
JPRS: 10663.
Order from OTS or SLA $1.10 62-13048

Trans. of Kuznechno-Shtampovochnoe Proizvodstvo (USSR) 1961 [v. 3] no. 4, p. 46-48.

DESCRIPTORS: *Metal forming presses, Conferences, Industrial production, *Machines, Machine tool industry, Metals, Processing, Pressure, *Rolling mills, *Screw threads, Metal screws.

Niewiadomski, T.
THE HARDENING OF PITCH. [1961] [13]p.
Order from SLA $1.60 61-20846

Trans. of Koks, Smola, Gaz (Poland) 1957 [v. 2] p. 108-114.

DESCRIPTORS: *Pitch, Hardening, Oxidation, Condensation, Hydrogen, Dehydrogenation, Coke, Chemical reactions, Sparks, Temperature, Coal, Processing.

At the beginning of the process oxidation and condensation takes place. Later, oxygen combines with free hydrogen and condensation continues until the loss of oxygen is almost complete. Oxygen has dehydrogenating and condensing effect upon pitch. The actual condensation of pitch accompanied by the loss of oxygen takes place in two stages. Each stage corresponds to different condensation of the same character. The second stage which begins at the softening temperature of about 150°C. by K-S goes violently and faster. When pitch is being hardened on plant-scale, one has to be very careful as it is not easy to control the process especially when softening point is above 175°C. There is danger of coking the reactor. The flash point temperature is directly proportional to softening point. The pitch hardened to about 160°C. (K-S) should not be transferred from the reactor at the temperature higher than 200°C. as any spark can ignite the pitch. (Author)

Roddewig, Hans.
SCALE-TYPE DEVICE FOR CONTROLLING THE WEIGHTS OF THE SEVERAL COMPONENTS OF A MIXTURE ACCORDING TO A PREDETERMINED RATIO, tr. by P. C. C. 25 Oct 61 [9]p. (2 figs. omitted).
Order from OTS or SLA $1.10 61-28962

Trans. of German patent 904, 832 and amendment, cl. 42f, gr. 31/03, by Roddewig and Co., pat. from 13 Nov 51, grant announced 7 Jan 54, pub. 10 Mar 55.

DESCRIPTORS: *Balances, Control systems, Mixtures, Economics, Materials, Preparation, Containers, Gypsum, *Weights (Analytical), Weighing.

A scale-type device for controlling the weights of the several materials of a mixture according to a definite ratio, especially in the preparation of plaster, is described comprizing a two-arm scale beam pivoted on a central fulcrum, one arm thereof carrying a nonslidable container for one of the materials and the other arm supporting a second container movable with respect to the fulcrum for another material. The second container is suspended from the scale beam by means of a slider engaging marks by means of a spring and automatically displacing a counterweight through levers.

Schütte, W.
SCIENTIFIC MANAGEMENT STAFF WORK IN THE SERVICE OF TOP MANAGEMENT. VI. SUMMARY AND OUTLOOK. Jan 62.
Order from BISI £2 BISI-1974, pt. 6

Trans. of Stahl [und] Eisen (West Germany) 1960, v. 80, 27 Oct, p. 1573-1574.

DESCRIPTORS: *Management engineering, Economics, *Industrial production.

Styrikovich, M. A., Miropol'skii, Z. L., and Chzhao-Yuan, S.
EFFECT OF NONUNIFORMITY OF HEATING ALONG A LENGTH OF PIPE ON THE MAGNITUDE OF CRITICAL HEAT FLUXES. [1961] 4p.
Order from ATS $6.50 ATS-91N57R

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1961, v. 139, no. 4, p. 859-862.

DESCRIPTORS: *Heating, *Pipes.

MATERIALS

EFFECT OF SPECIMEN SHAPE AND SIZE ON APPARENT STRENGTH OF CONCRETE. [1961] 13p. (3 figs. omitted) 7 refs.
Order from SLA $1.60 61-18966

Trans. of Betongen Idag (Norway) 1959, v. 24, no. 1, p. 11-16.

DESCRIPTORS: *Concrete, Mechanical properties, Test methods, Civil engineering, Stresses, Hardening

Ceramics and Refractories

Knapp, O.
METHOD FOR DETERMINING CHEMICAL RESISTANCE OF GLASS HOLLOW-WARE. [1961] 7p.
Order from ATS $9.00 ATS-01N57G

Trans. of Silikat Tech[nik] (East Germany) 1960, v. 11, no. 4, p. 149-151.

DESCRIPTORS: *Glass

Portnoi, K. I.
PROPERTIES OF MATERIALS BASED ON BORIDES AND OTHER HIGH MELTING COMPOUNDS (Svoistva Materialov na Osnove Boridov i Drugikh Tugoplavkikh Soedinenii). Dec 61 [9] p. 11 refs. RTS 1945.
Order from OTS or SLA $1.10 62-13736

Trans. of Issledovanie Splavov Tsvetnykh Metallov (USSR) 1960, v. 2, p. 197-204.
Other translations are available from LC or SLA mi$3.30, ph$7.80 in 61-13606, MCL-688/1, Aug 60 [43]p. and from HB $7.45 as HB-5174, Apr/May 61, 2900 words.

DESCRIPTORS: Refractory materials, Zirconium compounds, *Borides, Minerals, Materials, *Titanium compounds, *Chromium compounds.

Fuels, Lubricants, and Hydraulic Fluids

IN THE PETROLEUM REGIONS OF THE COUNTRY. 23 Oct 61 [4]p. JPRS: 10789.
Order from OTS or SLA $1.10 62-13247

Trans. of Izvestiya Vysshikh Uchebnykh Zavedenii. Neft' i Gaz (USSR) 1961 [v. 4] no. 2, p. 68.

DESCRIPTORS: *Petroleum, Transportation.

Rustschew, D. D.
MAKING COKE FROM LOW-GRADE POORLY-COKING COALS TO WHICH PETROLEUM PRODUCTS HAVE BEEN ADDED. [1961] 6p.
Order from ATS $8.35 ATS-59N57G

Trans. of Erdöl u[nd] Kohle (West Germany) 1961, v. 14, no. 7, p. 542-544.

DESCRIPTORS: *Coke, Production, *Coal, Petroleum.

Stoll, P. and Schmid, R.
NEW KNOWLEDGE ON THE PROPERTIES OF MINERAL OILS WITH REFERENCE TO THE CARE OF TRANSFORMER OILS. [1961] 35p.
Order from ATS $44.50 ATS-95N56G

Trans. of Schweiz[er] Arch[iv für] Angew[andte] Wiss[enschaft] u[nd] Tech[nik] 1960, v. 26, Dec, p. 455-477.

DESCRIPTORS: *Mineral oils, Transformers, Oils, Lubrication.

Leather and Textiles

Krause, Hermann.
WHAT IS IMPORTANT IN WARP SIZING? (Worauf Kommit Es beim Kettschlichten an?) tr. by M. Slade. [1960] [9]p. (foreign text included). Trans. no. 4772.
Order from OTS or SLA $1.10 60-17506

Trans. of Textil-Praxis (West Germany) 1959, v. 14, no. 10, p. 1003-1005.

DESCRIPTORS: *Textile industry, *Sizing, Sterlizers, Quality control *Threads, Chemical analysis, Viscosity.

Takahashi, Masao.
EFFECTS OF SPINNING CONDITIONS ON THE FINE STRUCTURE OF FILAMENTS. Rept. 26 of Studies on Acrylic Fiber. [1961] 13p. 4 refs.
Order from SLA $1.60 62-10224

Trans. of Kobunshi Kagaku (Japan) 1961, v. 18, no. 191, p. 163-168.
Another trans. is available from SA $15.00 as SA Code-66 [1961] 10p.

DESCRIPTORS: *Acrylonitriles, *Synthetic fibers, Fibers, Processing, Porosity, Filaments, Electron microscopy, Coagulation, Microstructure.

The internal structure of acrylic fibers was investigated by electron-microscope observation of ultra-thin slices of the sample and of fragments prepared by the mixer, and the effects of filament-forming conditions, mainly on the fine structure, were studied. The solvent-water system spinning usually resulted in the so-called porous granular structure, and it is believed that devitrification is closely related with such a structure. Depending on spinning conditions, it is possible to obtain uniformly structured samples with no void. A porous structure is easily assumed by the use of a spinning bath with great coagulating power, while conversely, a homogenous structure is obtained when the coagulating force is small and filament formation depends mainly on desolvation. A sample obtained by dry spinning is very uniform, and no void can be seen. (See also 60-18387)

Paints and Finishes

Kadaner, L. I. and Masik, A. Kh.
RELATIONSHIP BETWEEN COATING THICKNESS AND PROTECTION EFFECT OF POROSITY AND PHYSICAL AND STRUCTURAL CHANGES ON CORROSION RESISTANCE. May 60, 2p. 5 refs. [DSIR NLL] M 1921.
Order from OTS or SLA $1.10 61-13306

Trans. of #Zhur[nal] Priklad[noi] Khim[ii] (USSR) 1957 [v. 30, no. 5] p. 796-799.

DESCRIPTORS: *Coatings, Zinc coatings, Tin coatings, Thickness, Porosity, *Corrosion inhibition, Tests, Electroplating.

Zinc coatings 0.08 - 0.12 mil thick on iron or zinc were exposed to 3% NaCl solution and tin coatings 0.04 - 0.08 mil thick on iron, tin or copper were exposed to 0.1% oxalic acid solution. Porosity can have little effect on corrosion rates in the cases of tin on tin and zinc on zinc. On the other hand, the increased corrosion rates in the cases of zinc on iron, tin on iron and tin on copper are attributed to the formation of cells or couples around porous centres. (Author)

Plyplina, A. I. and others.
PHOTOCHEMICAL DEGRADATION OF CELLULOSE NITRATE COATINGS. Pt. 3 on Effect of Stabilisers on the Stability of Cellulose Nitrate in Lacquers. 1961, 1000 words.
Order from TTIS $9.00 TTIS-4013

Trans. of Lakokrasochnye Materialy i Ikh Primenenie (USSR) 1961, no. 4, p. 2-5.

DESCRIPTORS: *Coatings, *Cellulose nitrates, Deterioration, *Varnishes, Paints, Stability.

Rotinyan, A. L., Fedot'ev, E. E. and others.
POROSITY OF NICKEL COATINGS. Aug 59, 4p.
9 refs. [DSIR NLL] M 1809.
Order from OTS or SLA $1.10 61-13137

Condensed trans. of #Zhur[nal] Priklad[noi] Khim[ii] (USSR) 1957 [v. 30, no. 5] p. 716-723.

DESCRIPTORS: Coatings, *Nickel coatings, Porosity.

Tomashpol'skii, M. S.
STOVING PAINTED METAL PARTS [Ratsional'naya Sushka Okrashennykh Metallicheskikh Izdelii].
Oct 59 [3]p. [DSIR NLL] M 1808.
Order from OTS or SLA $1.10 61-13136

Trans. of Avtomobil'naya Promyshlennost' (USSR) 1958 [no. 12] p. 29-33.

DESCRIPTORS: Automobile industry, *Metals, *Paints, Drying, *Convection, *Infrared radiation, Radiant heating panels, Effectiveness.

This article gives one of those all-too-infrequent glimpses into the practical side of the Russian metal finishing industry. It summarizes the pros and cons of convection and infra-red stoving systems as seen through the eyes of a Russian car finishing technologist and describes the infra-red installation in use at the Likhacher Automobile Works, Moscow. (Translator?)

Photographic Materials

Anfilov, I. V.
INVESTIGATION OF THE KINETICS OF THE DEVELOPMENT OF THE LATENT XEROGRAPHIC IMAGE. [1961] 5p.
Order from ATS $9.10 ATS-46N57R

Trans. of Zhur[nal] Nauch[noi] i Priklad[noi] Fot[ografii] i Kinematografii (USSR) 1961, v. 6, no. 3, p. 220-224.

DESCRIPTORS: *Electrophotography.

Grechko, L. and Vilenskii, Yu.
CONTACT FOG IN MULTILAYER COLOR FILMS. [1961] 2p.
Order from ATS $3.50 ATS-47N57R

Trans. of Zhur[nal] Nauch[noi] i Priklad[noi] Fot[ografii] i Kinematografii (USSR) 1961, v. 6, no. 3, p. 225-226.

DESCRIPTORS: *Color film, Films, Fog

Gross, L. G.
RELATIONSHIP BETWEEN THE SPEED AND THE PHOTOELECTRIC SENSITIVITY OF A PHOTOGRAPHIC EMULSION. [1961] 3p. 9 refs.
Order from OTS or SLA $1.10 61-20058

Trans. of Zhurnal Nauchnoi i Prikladnoi Fotografii i Kinematografii (USSR) 1960, v. 5, no. 3, p. 219-220.

DESCRIPTORS: *Photographic emulsions, Photoelectric effect, Photoconductivity, Sensitivity, Reduction, Photographic chemicals, Photography.

Uspeknskii, A. N.
ADDITIVE COPIER AKP-2 FOR CONTACT PRINTING OF AERIAL COLOR PHOTOGRAPHS. [1961] 6p.
Order from ATS $10.35 ATS-15N56R

Trans. of Zhur[nal] Nauch[noi] i Priklad[noi] Fot[ografii] i Kinematografii (USSR) 1960, v. 5, no. 6, p. 413-418.

DESCRIPTORS: *Aerial photographs, Printing, Color photography.

Vasil'ev, V., Lyalikov, K., and Perfilov, N.
SENSITIVITY OF EXTRA FINE GRAIN EMULSIONS P-9 AND PR TO THE VISIBLE SPECTRUM AND THEIR OPTICAL SENSITIZATION. [1961] 3p.
Order from ATS $4.00 ATS-48N57R

Trans. of Zhur[nal] Nauch[noi] i Priklad[noi] Fot[ografii] i Kinematgrafii (USSR) 1961, v. 6, no. 3, p. 227-229.

DESCRIPTORS: *Photographic emulsions, Sensitivity.

Vendrovskii, K. V. and Sheberstov, V. I.
REVERSING THE DESENSITIZING EFFECT OF MOISTURE ON PHOTOGRAPHIC EMULSIONS. [1961] 2p. 2 refs.
Order from OTS or SLA $1.10 61-20757

Trans. of Zhurnal Nauchnoi i Prikladnoi Fotografii i Kinematografii (USSR) 1960, v. 5, no. 4, p. 295-296.

DESCRIPTORS: *Photographic emulsions, Sensitivity, Moisture, Water vapor.

Water vapor reduces the speed of photographic emulsion, but when the emulsion surface dries the speed of the emulsion is restored. Reversibility of the desensitizing effect of moisture depends upon the duration of exposure. It is assumed that the light sensitivity centers on which small development centers are formed, are deactivated irreversibly under the effect of moisture, while the deactivation of centers, used in the formation of large development centers, is reversible. A high concentration of photo electrons, which cannot be trapped simultaneously on a few light sensitivity centers, is formed in the emulsion grain conduction band after short exposures. In order to reserve photo electrons for the formation of a latent image, temporary centers are necessary for their trapping. Obviously, the easily deactivated light-sensitivity centers serve as such. (See also 60-14276)

Plastics

PROCESS FOR THE PRODUCTION OF HOLLOW BODIES OF THERMOPLASTIC SYNTHETIC RESINS, tr. by P. C. C. 1 Dec 61, 4p. (2 figs. omitted).
Order from OTS or SLA $1.10 62-13869

Trans. of Italian patent 522 838, cl. XXIV, by Badische Anilin und Soda Fabrik A. G. (Germany) appl. 25 Aug 54, granted 12 Apr 55, printed July 57 (priority: appl. B. 27,184, Germany, 26 Aug 53). Another trans. is available from OTS or SLA $1.10 as 61-23230, 3 May 61, 5p.

DESCRIPTORS: *Resins, *Plastics, *Containers, *Cylindrical shells.

For abstract see Technical Translations 6: 197, 1961.

Bunge, Willi, Bayer, Otto and others.
URETHANE PLASTICS. [1961] 12p. 6 refs.
Order from OTS or SLA $1.60 61-20864

Trans. of Belgian patent 596 036, by Farbenfabriken Bayer AG, Internat. Convention: appl. in West Germany F 29 617 IVb/39b, 15 Oct 59 [pub] 14 Oct 60.

DESCRIPTORS: *Urethanes, *Plastics, Preparation, Colors, Light, Heat, Stability, Isocyanates, Phenolic resins Phenol-formaldehyde resins, Resins, Ethylenes, Oxides, Chemical reactions.

The invention has for its object a process for preparatory of polyurethane plastic materials characterized by the following points, considered individually or in diverse combinations. An organic polyisocyanate is reacted with the condensation product of a phenol-formaldehyde resin and an alkylene oxide. To obtain cellular materials, water is added to the reaction. To obtain a coating, the procedure is carried out in an appropriate organic solvent. To obtain a non-porous material, an excess of an organic polyisocyanate is reacted with the condensation product in a first step to obtain a prepolymer modified by the isocyanate and containing terminal NCO groups, then the prepolymer is mixed with a cross-linking agent. The resin is of the tert-butylphenol-formaldehyde type.

Kiselev, B. A.
GLASS PLASTICS [Stekloplastiki]. 22 Sep 61 [27]p. (3 figs. 4 tables omitted) 74 refs. FTS-9967
Order from OTS or SLA $2.60 62-13297

Unedited rough draft trans. of Uspekhi Khimii (USSR) 1958 [v. 27] no. 9, p. 1101-1114.
Another trans. is available from LC or SLA mi$2.70, ph$4.80 as 60-13438, RTS-1241, Dec 59, 25p.

DESCRIPTORS: *Plastics, *Glass textiles.

A survey.

Niklas, H. and Eiffländer, K.
LONG-TERM BEHAVIOR OF POLYETHYLENE AND POLYVINYLCHLORIDE PIPES (Zeitstandverhalten von Rohren aus Polyäthylen u Polyvinylchlorid). [1961] [18]p. 4 refs.
Order from SLA $1.60 61-20976

Trans. of Kunststoffe (West Germany) 1959, v. 49, no. 3, p. 109-113.

DESCRIPTORS: Polymers, *Ethylenes, *Vinyl chlorides, *Pipes, *Plastic tubing, Elasticity, Plasticity, Deformation, Stresses, Fracture (Mechanics), Life expectancy.

When thermoplastic materials are exposed to long-term stress the elongation increase with time is proportional to the stress only at very low stresses. Higher stresses cause a different behavior of elastic and plastic deformations and, like fracture of the material, cannot be expressed mathematically so that at the present time the service life expectation of pipes of plastic materials can be predicted only by long-term tests at constant temperatures and constant internal pressures. (Author)

Wood and Paper

Nepenin, Yu. N. and Demchenkov, P. A.
CHEMICAL CHANGES IN COOKING LIQUOR AND WOOD RESIDUE IN THE PRODUCTION OF SULFITE PULP. [1961] 6p.
Order from ATS $7.50 ATS-19N55R

Trans. of *Zhur[nal] Priklad[noi] Khim[ii] (USSR) 1961, v. 34, no. 5, p. 1143-1146.

DESCRIPTORS: *Sulfites, *Wood pulp.

Schmidt, S.
FROM THE LITERATURE ON CYLINDER MOULD TECHNIQUE. [1961] 9p. (18 figs. omitted) 18 refs.
Order from SLA $1.10 62-10219

Trans. of Zellstoff u[nd] Papier (Germany) 1961 [v. 10] no. 1, p. 18-24.

DESCRIPTORS: *Paper, Processing, *Wood pulp machines, Design, Operation.

MATHEMATICS

REFERATIVNYI ZHURNAL. MATEMATIKA (USSR) 1960, NOS. 8-12, ABSTRACTS 8552-14475: SELECTED TRANSLATIONS OF ABSTRACTS OF ARTICLES BY CHINESE AUTHORS PERTAINING TO COMMUNIST CHINA (Soviet Abstracts, Mathematics). 20 Oct 61 [126]p. JPRS: 10658.
Order from OTS or SLA $10.10 62-13009

Complete translations of the Russian-language abstracts of articles originally published in the Sino-Soviet bloc.

DESCRIPTORS: *Mathematics, Abstracting, Periodicals, Translations, China, History, Number theory, Algebra, Matrix algebra, Groups (Mathematics), Algebras, Algebraic topology, Topology, Complex variables, Functions, Differential equations, Functional analysis, Integration, Polynomials, Determinants, Real variables, Series, Conformal mapping, Games theory, Geometry, Inequalities, Integrals, Partial differential equations, Numerical methods and procedures.

Medgyessy, Pal.
DECOMPOSITION OF SUPERPOSITIONS OF DISTRIBUTION FUNCTIONS. Dec 61, 227p.
Order from PLP $9.50

Trans. of unidentified Hungarian mono., n.p., n.d.

DESCRIPTORS: *Decomposition, *Statistical functions, Density, *Probability.

Pugachev, V. S.
AN EFFECTIVE METHOD OF OBTAINING BAYES' SOLUTION. [1961] [15]p. 4 refs.
Order from SLA $1.60 62-10140

Trans. from mono. Prague Conference on Information Theory, Statistical Decision Functions, and Random Processes (no. 2) [held at] Liblice, 1-6 June 59. Transactions.

DESCRIPTORS: *Statistical processes, *Statistical functions, Probability, Information theory, Mathematical prediction.

A general method of obtaining Bayes' solution in the presence of an arbitrary loss function is given for the case when the observable and evaluated random functions depend on a finite dimensional random vector U and when conditional distribution of an observable random function is normal for any fixed value of the vector U. This method makes it possible to determine, in the most general conditions, optimal systems destined for the detection and reproduction of signals in additive noise. Particular cases are brought forward to demonstrate the earlier known methods of determining optimal systems for a case of normal additive noise. (Author)

Taurit, G. E.
DEVELOPMENTS IN ELECTROPLATING AND POLISHING AT THE GOR'KII MOTOR CAR WORMS, MOSCOW. Mar 60 [5]p. [DSIR NLL] M 1702.
Order from OTS or SLA $1.10 61-13038

Trans. of Vestnik Mashinostroeniya (USSR) 1959 [v. 39] no. 2, p. 65-69.

DESCRIPTORS: Automobile industry, Manufacturing methods, *Electrolytic polishing, *Electroplating, Copper plating, Zinc plating, Tin plating, Ultrasonics, Plating, *Electroplating solutions.

Developments include the use of periodic reverse current in copper plating; the use of higher current densities with copper plating baths used at room temperature and containing additions of naphthalene disulphonic acid and formaldehyde; P. R. cyanide zinc plating in baths containing an addition of sodium sulphite; bright nickel plating at higher current densities made possible by the addition of sodium fluoride; immersion tin plating of aluminum pistons in a hot solution of stannous chloride, caustic soda and hydrogen perioxide; the use of ultrasonics in plating; and the introduction of improved plating jigs and of methods of automatic polishing.

Computing Devices

Arkhipova, E. G.
YEAR-TO-YEAR CHANGES OF THE HEAT BALANCE IN THE NORTHERN PORTION OF THE ATLANTIC OCEAN WITHIN THE LAST 10 YEARS (Mezhgodovye Izmeneniya Teplovogo Balansa v Severnoi Chasti Atlanticheskogo Okeana za Poslednee Desyatiletie) tr. by Irene A. Donehoo. Aug 61 [32]p. 16 refs.
Order from OTS or SLA $3.60 61-28371

Trans. of Gosudartvennyi Okeanograficheskii Institut. Trudy (USSR) 1960, v. 54 [66] p. 35-60.

DESCRIPTORS: *Atlantic Ocean, *Heat transfer, Hydrology, Meteorology, Climatic factors, Maps, Meteorological charts, Solar radiation, Oceans, Oceanographic data, Atmosphere, Oceanographical vessels, Surface temperatures, Ocean currents.

An analysis of computation results for the heat balance and its components for individual years (from 1948 through 1957) according to the data of the ten weather ships situated in the North Atlantic, and also an analysis of their year-to-year variations, average long-term values of the heat content, annual internal heat exchange and warm advection in the active layer of the ocean, showed that in thermal interaction between the ocean and the atmosphere in all regions of the North Atlantic some definite coordinate variations are discovered: in the region of the Gulf Stream the intensity of the heat emission increases periodically (in the same period the heat emission in the remaining branches of the warm current - the North Atlantic and the Irminger is also high) and after 4-5 years it weakens. The greatest long-term variation in the thermal interaction between the ocean and the atmosphere is observed in the region of the Gulf Stream and the North Atlantic current, i. e., in regions of greatest heat emission by the ocean. (Author)

Khetagurov, Ya. A., ed.
COMPUTER TECHNOLOGY: COLLECTION OF ARTICLES. 24 Oct 61 [86]p. JPRS: 10638.
Order from OTS or SLA $8.10 61-28875

Trans. of mono. Vychislitel'naya Tekhnika, Moscow, 1960, 56p.

DESCRIPTORS: Design, *Digital computers,*Control systems, Mathematical computer data, Memory devices, Magnetic properties, Recovery, Automatic, Electronic circuits, Model tests, Reduction, Time, Electron multipliers, Tracking, *Analog computers, Computers.

Contents:
Design problems of a digital machine control system, by I. O. Atovmyan
Arithmetic device of the computer machine, by G. N. Solov'ev
Problems of development of magnetic drum memory device with high speed recovery, by V. I. Zuev
Certain design questions for automatic electric model control circuits, by I. M. Vitenberg
Arrangement for reduction in multiplication time, by Ya. A. Khetagurov
The question of a tracking integrator of a digital differential analyzer, by E. P. Zhidkov.

Volosnikov, V. P.
USE OF COMPUTERS FOR THE AUTOMATION OF ELECTRIC CONTROLS (Spol'zovanie Vychislitel'nykh Mashin dlya Avtomatizatsii Elektroprivodov). 18 Sep 61 [130]p. 48 refs. JPRS: 10169.
Order from OTS or SLA $10.10 61-28511

Trans. of Biblioteka po Avtomatike (USSR) 1960, v. 17, 120p.

DESCRIPTORS: *Computers, *Automation, *Control systems, Electronic circuits, Electrical engineering, *Digital computers, Design, Electron tubes, Semiconductors, Cybernetics, Reliability, Coding, Programming, Memory devices, Analog-to-digital converters.

This pamphlet enables one to get acquainted with contemporary trends in automation of electric controls, with elements of computer techniques, the construction of computing machines and their classification. Presented are diagrams and rules for establishment of logical elements of computing and controlling machines. Given are alternative modes for construction of special elements which transform physical parameters into a numerical form and vice versa. The book is aimed at a wide range of people interested in automation who are familiar with the fundamentals of electricity, electronics, and automatic control. (Author)

Zhogolev, E. A.
THE INSTRUCTION SYSTEM AND THE INTERESTING SYSTEM FOR THE "SETUN" MACHINE. 26 Jan 62, 18p. JPRS: 12138.
Order from OTS $0.50 62-11109

Trans. of Zhurnal Vychislitel'noi Mathematiki i Matematicheskoi Fiziki (USSR) 1961, v. 1, no. 3, p. 499-512.

DESCRIPTORS: *Digital computers, Computers, Programming, Design, Memory devices.

MECHANICS

Ambartsumen, S. A.
CONCERNING THE CALCULATION OF SHALLOW SHELLS. [1961] 11p. 5 refs.
Order from OTS or SLA $1.60 61-20031

Trans. of Prikladnaya Matematika i Mekhanika (USSR) 1947, v. 11, p. 527-532.

DESCRIPTORS: *Elastic shells, Mathematical analysis, Differential equations.

Galanova, Z. S.
THE LAMINAR BOUNDARY LAYER OF A FLAT PLATE IN THE PRESENCE OF DISSOCIATION. 17 Aug 61 [8]p. 4 refs. MCL-1190/1 + 2.
Order from OTS or SLA $1.10 61-28708

Unedited rough draft trans. of Leningrad U. Vestnik (USSR) 1960 [v. 15] no. 19, Seriya Matematiki, Mekhaniki i Astronomii, no. 4, p. 95-99.

DESCRIPTORS: *Laminar boundary layer, *Metal plates, *Dissociation, Equations, Temperature, Reaction kinetics, Kinetic theory, Friction, Enthalpy, Differential equations, Numerical analysis, Errors.

In this study we derive second approximations of the solutions to these equations for a heat-insulated flat plate and a flat plate with a given wall temperature; a numerical calculation of the heat-insulated flat plate for M_∞ numbers of 10, 20, and 30 is also given as an example. (Author)

Kulikov, N. K.
INVESTIGATION OF FREE OSCILLATIONS OF THE NON-LINEAR SYSTEMS WITH ONE OR TWO DEGREES OF FREEDOM (K Issledovaniyu Svobodnykh Kolebanii Nelineinykh Sistem s Odnoi i Dvumya Stepenyami Svobody) tr. by A. Pingell. 1961, 13p. 10 refs. N R L Trans. no. 878.
Order from OTS $0.50 62-11137

Trans. of Akademiya Nauk SSSR. O[tdelenie] T[ekhnicheskikh] N[auk]. Izvestiya: Mekhanika i Mashinostroenie, 1959, no. 2, p. 81-87.

DESCRIPTORS: *Nonlinear systems, *Oscillation, Numerical analysis, Non-linear differential equations.

The well-known approximation methods for the solution of non-linear differential equations, for example, different variations of the method of small parameters, Galerkin's method, methods of direct and harmonic linearization and others, in application to the investigation of oscillations in the first approximation, give us the harmonic law of motion. However, the value of the period of oscillations with a large degree of nonlinearity is often insufficiently accurate. Further, investigation is made of the undamped oscillations of systems of the second and fourth orders with the aid of a method, which makes it possible to obtain more accurate results, apparently, even with a large nonlinearity. (Author)

Vekua, E. N.
THE THEORY OF THIN, SHALLOW, ELASTIC SHELLS. [1961] 8p. 6 refs.
Order from OTS or SLA $1.10 61-20030

Trans. of Prikladnaya Matematika i Mekhanika (USSR) 1948, v. 12, p. 69-74.

DESCRIPTORS: *Elastic shells, Theory.

METALLURGY

SOVIET NONFERROUS METALLURGY: SELECTED TRANSLATIONS NO. 32. 11 Aug 61 [23]p. JPRS: 9922.
Order from OTS or SLA $2.60 61-27867

Trans. of unidentified mono. pub. Dnepropetrovsk, 1959, p. 3-12; and mono. Vyimannya Lavoyu z Zastosuvannyam Shchyta Shch N-M-57 un Nikopol's'-komu Baseini, Dnepropetrovsk, 1959, p. 6-7, 11-12, 21.

DESCRIPTORS: *Metallurgy, Translations, *Sintering, Industrial plants, Ores, Climatic factors, *Water supplies, *Manganese compounds, Oxides, *Mining engineering, Control systems, Automation, *Shielding, Safety devices.

Contents:
The Bogdanovskaya concentration and sintering plant of the "Nikopol'-Marganets" trust, by I. I. Grazhdantsev (selected part)
Long-wallmining with the aid of the Shch N-M-57 shield at the Nikopol' Marganets basin, by O. Barlas (selected parts).

Aksenov, F. V., Lashko, N. F., and Rodina, E. Ya.
STRUCTURE FORMATION DURING SOLIDIFICATION OF TURBINE BLADES CAST IN INVESTMENT PATTERNS. 7 Aug 61, 20p. (5 figs. 2 tables omitted). MCL-1051/1.
Order from OTS or SLA $1.60 61-28691

Unedited rough draft trans. of mono. Trudy Chetvertogo Soveshchaniya po Teorii Liteynykh Protsessov [Conference on the Theory of Casting Processes (no. 4)] Moscow, 1960, p. 166-175.

DESCRIPTORS: *Turbine blades, Materials, Casting, *Heat resistant alloys, Alloys, Hardening, Microstructure, *Castings, Mechanical properties.

Common nichromes and nichromes subsequently alloyed with molybdenum, cobalt and aluminum were found to be extremely sensitive to overheat. Nichrome with an addition of titanium is little sensitive to the solidification rate and overheat. Nichromes with admixtures of tungsten or tungsten and molybdenum were coarse-grained regardless of the casting temperature. Micrograins and the distribution of microstructure had a greater effect on the improvement of the toughness of alloys cast centrifugally as compared with alloys cast into stationary forms, than the effect of grain size.

Altpeter, W.
PRACTICAL EXPERIENCE GAINED WITH THE HYDRAULIC TRANSPORT OF GRANULATED BLAST FURNACE SLAG AND OTHER SOLIDS IN IRON AND STEEL WORKS (WITH DISCUSSION). Dec 61.
Order from BISI £6 5s BISI-2401

Trans. of Stahl [und] Eisen (West Germany) 1961, v. 81, 20 July, p. 1006-1014.

DESCRIPTORS: *Iron industry, *Steel industry, *Slags, Metal powders, *Transportation.

Bakulin, N. I.
ROLLING OF IRON-NICKEL POWDERS INTO STRIP. Nov 61, 2500 words.
Order from HB $7.50 HB-5138

Trans. of Ts[entral'nyi] N[auchno]-I[ssledovatel'skii] I[nstitut] Ch[ernoi] M[etallurgii]. Instit Stali. Sbornik Trudov (USSR) 1960, v. 23, p. 23-33.

DESCRIPTORS: *Powders, *Iron, *Nickel, Magnetism.

Beckman, G.
ON THE POSSIBILITY OF IDENTIFYING FLAKES IN FORGINGS BY THE PULSE-ECHO TECHNIQUE. Dec 61, 3200 words.
Order from HB $6.90 HB-5178

Trans. of Neue Hütte (East Germany) 1961, v. 6, no. 2, p. 99-106.

DESCRIPTORS: *Forging, Test methods, Test equipment, *Non-destructive testing, *Ultrasonic radiation.

Bohnen, J. K.
HISTORICAL DEVELOPMENT OF TUBE WELDING PROCESSES, ESPECIALLY THE ELECTRIC RESISTANCE WELDING PROCESSES. Nov 61.
Order from BISI £8 10s BISI-2409

Trans. of Bander, Bleche, Rohre (West Germany) 1961 Jan, p. 8-15 and Feb, p. 56-62.

DESCRIPTORS: *Welding, Electric welding, History,

Bratchikov, S. G.
SPECIFIC HEAT OF PELLETS AND ORE CONCENTRATES. Dec 61, 1700 words.
Order fromHB $4.90 HB-5140

Trans. of Izvest[iya] V[ysshikh] U[chebnykh] Z[avedenii]. Chern[aya] Met[allurgiya] (USSR) 1961, no. 2, p. 5-9.

DESCRIPTORS: *Ores, *Specific heat, Pellets.

Braun, M. P.
EFFECT OF SMALL ADDITIONS OF "MODIFIERS" ON THE MECHANICAL PROPERTIES OF ALLOY CAST STEEL. Dec 61, 3400 words.
Order from HB $9.65 HB-4829

Trans. of Akad[emiya] Nauk SSSR. O[tdelenie] T[ekhnicheskikh] Nauk. Izvest[iya:] Met[allurgiya] i Topl[ivo] 1959, no. 4 [p. 59-65].

DESCRIPTORS: *Steel, *Cast steel, Alloys, Mechanical properties, Chromium, Manganese, Nickel, Vanadium, Zirconium, Selenium.

Cordes, H.
AUTOMATION OF ROLL SETTING BY MEANS OF PUNCHED CARD PROGRAMMING. Nov 61.
Order from BISI £3 5s BISI-2089

Trans. of BBC-Nachrichten [sic] 1960, v. 42, May, p. 228-231.

DESCRIPTORS: *Rolling mills, Automation, Programming, Punched card methods.

Dick, W., Holler, P., and Lachky, E.
CONTINUOUS ULTRASONIC TESTING OF STEEL PLATE IN PRODUCTION. Dec 61, 5600 words.
Order from HB $15.75 HB-5256

Trans. of Stahl und Eisen (West Germany) 1961, v. 81, no. 17, p. 1116-1122.

DESCRIPTORS: *Steel, *Metal plates, Test methods, Test equipment, *Ultrasonic radiation, *Nondestructive testing.

Ergang, R. and Huppertz, P. H.
DESCALING OF WIRE ROD AND WIRE OF AUSTENITIC STEEL AND NICKEL CHROMIUM ALLOYS WITH SPECIAL CONSIDERATION OF VACUUM ANNEALING. Dec 61, 6500 words.
Order from HB $17.50 HB-5261

Trans. of Metall-Reinigung Vorbehandlung (West Germany) 1961, v. 10, no. 6, p. 89-93 and 108-113.

DESCRIPTORS: *Steel wire, *Wire, Rods, Austenite, *Chromium alloys, *Nickel alloys, Alloys, *Scale, Separation.

Geleji, A. and Devenyi, G.
CALCULATION OF THE POWER REQUIREMENTS FOR ROLLER SHEET STRAIGHTENING MACHINES [Die Berechnung des Leistungsbedarfs der Blech-Rollenrichtmaschinen]. Oct 61
Order from BISI £4 5s BISI-2393

Trans. of Acta Technica (Hungary) 1957, [v. 17] no. 3/4, p. 361-380.

DESCRIPTORS: *Rolling mills, *Sheets, Metal plates, Wire straighteners, Machines, *Power supplies.

Gurevich, Ya. B.
HOT ROLLING OF METALS UNDER VACUUM. Dec 61, 2800 words.
Order from HB $8.40 HB-5340

Trans. of mono. All-Union Conference on the Use of Vacuum in Metallurgy (no. 2). Papers, USSR Acad. Sci. Press, 1960, p. 326-333.

DESCRIPTORS: *Metals, *Alloys, *Steel, Heat treatment, Cooling.

Gurvich, A. K.
ULTRASONIC INSPECTION OF FILLET WELDS. Nov 61, 1500 words.
Order from HB $3.90 HB-4489

Trans. of Avtomaticheskaya Svarka (USSR) 1956 [v. 9] no. 5, p. 84-89.

DESCRIPTORS: *Welds, Ultrasonic radiation. Test methods.

Karlsson, Wilhelm.
THE POSSIBILITIES OF USING LIQUID FUEL IN IRON AND STEEL WORKS. June 48, 23p.
Order from SLA $2.60 60-18818

Trans. of Varmlandska Bergsmannaforening. Annaler (Sweden) 1946, p. 47-94.

DESCRIPTORS: Iron, Steel, Processing, *Fuels, Liquids, *Fuel oil, *Oil burning furnaces, Fuel consumption.

Khrapov, A. Ya. and Chernobrovkin, V. P.
EFFECT OF INOCULANTS ON THE SURFACE TENSION OF CAST IRON. Dec 61, 3200 words.
Order from HB $8.75 HB-5282

Trans. of Izvest[iya] V[ysshikh] U[chebnykh] Z[avedenii]. Chern[aya] Met[allurgiya] (USSR) 1958, no. 3, p. 42-51.

DESCRIPTORS: *Cast iron, *Surface tension, Iron, Silicon, Aluminum, Calcium compounds, Silicides.

Kreulitsch, H.
INVESTIGATION UNDER OPERATING CONDITIONS OF A HOT SLAB OR BILLET SHEAR. July 61.
Order from BISI £3 15s BISI-2267

Trans. of Bänder, Bleche, Rohre (West Germany) 1961, Jan, p. 1-5.

DESCRIPTORS: *Castings, Processing.

Muramatsu, K.
VACUUM FUSION TECHNIQUES USING NICKEL AND NICKEL-TIN BATHS, AND SOLID DIFFUSION EXTRACTION. Pt. 1 of the Determination of Micro Quantities of Gases in Molybdenum. [1961] 10p.
Order from ATS $27.95 ATS-32N53J

Trans. of Shinku (Japan) 1960, v. 3, no. 9, p. 341-348.

DESCRIPTORS: *Nickel, *Molybdenum, Impurities, Determination, *Tin, Solutions, Diffusion, *Gases.

Opel, P.
THE EFFECT OF ALUMINIUM CONTENT AND OF WORKING CONDITIONS ON THE HOT-WORKING PROPERTIES OF HEAVY FORGINGS. Jan 62.
Order from BISI £3 15s BISI-2511

Trans. of Paper presented at the Conference on Heavy Forging, Terni, Sep 61.

DESCRIPTORS: *Aluminum, Forge presses, *Forging.

Perevyazko, A. T. and Chuiko, N. M.
EFFECT OF MELTING PRACTICE, VACUUM TREATMENT AND POURING UPON SPOT SEGREGATION OF CHROME-ALUMINUM STEELS. Dec 61, 4600 words.
Order from HB $12.75 HB-5265

Trans. of Izvest[iya] V[ysshikh] U[chebnykh] Z[avedenii]. Chern[aya] Met[allurgiya] (USSR) 1961, no. 6, p. 42-52.

DESCRIPTORS: *Steel, *Chromium alloys, *Aluminum alloys, Melting, Alloys.

Puschner, M. and Suchanek, G.
WELDING GREY AND NODULAR CAST IRONS. Sep 61.
Order from BISI £ 4 BISI-2116

Trans. of Technica (Switzerland) 1960, v. 9, 7 Oct, p. 1295-1298.

DESCRIPTORS: *Cast iron, *Welding.

Röntgen, P. and others.
THE STRUCTURE AND PROPERTIES OF METALLURGICAL SLAGS. II. VISCOSITY MEASUREMENT OF SLAG MELTS IN THE Fe - CaO - SiO_2 AND FeO - CaO - Al_2O_3 - SiO_2 SYSTEMS. Jan 62.
Order from BISI £7 15s BISI-2475

Trans. of Z[eitschrift für] Erz[bergbau und] Met[allhüttenwesen] (West Germany) 1960, v. 13, Aug, p. 363-373.

DESCRIPTORS: *Slags, Melting, *Viscosity, Measurement, Calcium compounds, Oxides, Iron compounds, Silicon compounds, Aluminum compounds, Liquid metals.

Voitovich, R. F.
HIGH-TEMPERATURE OXIDATION OF ALLOYS WITH HIGH MELTING POINT INSTALLMENT. II. ALLOYS OF TUNGSTEN WITH ZIRCONIUM. 27 June 61 [6]p. (5 figs. omitted) 5 refs. MCL-951/1; AD-261 793.
Order from OTS or SLA $1.10 61-27439

Unedited rough draft trans. of #Fizika Metallov i Metallovedenie (USSR) 1960, v. 10, no. 6, p. 862-865.

DESCRIPTORS: *Tungsten alloys, *Zirconium alloys, Heat resistant alloys, Oxidation, High temperature research, Melting, Chemical analysis, Hardness, Metals, Resistance.

The alloying of tungsten by zirconium and of zirconium by tungsten lead to the loss by these metals of resistance to oxidation, especially above the temperature of 600°.

Ferrous Metals

Adrianova, V. P., ed.
CLASSIFICATION OF STEELS, THEIR GRADES, AND TECHNICAL SPECIFICATIONS AND DESIGNATION OF TYPES. Dec 61.
Order from BISI £3 BISI-2000

Trans. of mono. Kratkii Spravochnik Metallurga (Short Handbook for the Metallurgist) Moscow, 1960, p. 228-231 and 262-347.

DESCRIPTORS: *Steel, *Classification, Tables.

Bandel, Gerhard.
SPECIAL PHENOMENA IN CONNECTION WITH THE SCALING OF HEAT-RESISTANT STEELS AND ALLOYS. Rept. no. 566 of Werkstoffausschuss [Materials Committee] of the Verein Deutscher Eisenhüttenleute. [1961] 30p. (32 figs. omitted) 61 refs.
Order from SLA $2.60 61-20753

Trans. of Archiv für das Eisenhüttenwesen (Germany) 1941, v. 15 [no. 6] p. 271-283.

DESCRIPTORS: *Heat resistant alloys, *Steel, Iron, Oxides, Crystals, Growth, Coatings, *Scale.

Engell, H. J. and Ramchandran, T.
THE EFFECTS OF ALLOYING ELEMENTS ON THE ELECTROCHEMICAL BEHAVIOUR OF CHEMICALLY-RESISTANT STEELS. Dec 61.
Order from BISI £2 15s BISI-2448

Trans. of Zeitschrift für Physikalische Chemie [Leipzig] (East Germany) 1960, v. 215, no. 3/4, p. 176-184.

DESCRIPTORS: *Stainless steel, *Steel, *Electrochemistry, Corrosion, Alloys, Resistance.

Gladkovskii, V. A., Vereshchagin, L. F. and Ivanov, V. E.
AN INVESTIGATION OF THE STRENGTH OF THICK-WALLED PIPES (Issledovanie Prochnosti Tolstostennykh Trub). [1961] 6p. 5 refs.
Order from OTS or SLA $1.10 61-20950

Trans. of #Fizika Metallov i Metallovedenie (USSR) 1958, v. 6, no. 6, p. 1100-[1104].

DESCRIPTORS: *Steel, *Pipes, Steel tubing, Mechanical properties, Tests, Pressure, High pressure research.

The assumption that the pressure at which tube failure will occur depends basically on the thickness of the

tube and the strength characteristics of the tube material was investigated. Strength studies were made of tubes subject to internal pressures up to 14 000 atm. Tubes were tested which were made of four differing grades of steel: 30KhGSA, 40Kh, U10 and EYaIT. The failure curves (D/d versus pressure) for tubes of the four steels are not in agreement with any of the semi-empirical formulae proposed for calculating the pressure at which thick-walled tubes fail.

Hesselbach, H.
PROGRESS IN THE FIELD OF ELECTRICAL SHEETS. Aug 61.
Order from BISI £4 15s BISI-2221

Trans. of Technica (Switzerland) 1959 [v. 8] 20 Nov, p. 1333-1338.

DESCRIPTORS: *Sheets, Electrical properties, *Steel

Kathrein, A. and Suceveanu, Gh.
X-RAY STUDY OF SULFURIZED LAYERS ON STEEL. Dec 61, 3500 words.
Order from HB $9.80 HB-5429

Trans. of [Academia Republicii Populare Romine. Centrul de Cercetari Metalurgie]. Studii si Cercetarii de Metalurgie (Rumania) 1961, v. 6, no. 2, p. 171-183.

DESCRIPTORS: *Cast iron, Iron, *Steel, Impregnation, Surfaces, *Sulfur, Coatings, X-ray diffraction analysis.

Kosmider, H. and others.
POSSIBILITIES OF SPEEDING UP THE REFINING REACTIONS IN THE BASIC OXYGEN PROCESS (RAPID REFINING). Oct 61, 5000 words.
Order from HB $14.70 HB-5190

Trans. of Stahl und Eisen (West Germany) 1961, v. 81, no. 17, p. 1107-1116.

DESCRIPTORS: Refineries, Chemical reactions, Phosphorus, Carbon, *Cast iron, Calcite, Oxygen, Stirrers, *Steel, Dephosphorization, Removal, Ignition, *Iron compounds, Oxides, Slags, Heat.

Lewis, Robert Albert.
PROCEDURE FOR THE MANUFACTURE OF ALUMINUM BY ELECTROLYTIC REDUCTION OF ALUMINA. [1961] 17p.
Order from OTS or SLA $1.60 61-18578

Trans. of French patent 1, 227, 482 (1960) by Kaiser Aluminum and Chemical Corporation, USA.

DESCRIPTORS: *Aluminum, Manufacturing methods, *Oxides, *Aluminum compounds, *Electrolytes, Chemical reactions, Reduction.

An improved procedure is proposed for the electrolytic production of aluminum. It consists of passing a current through the electrolyte, modified by a content of lithium, equal to that which results from the addition of lithium fluoride, in an amount between 2 and 20% by weight of the electrolyte, and of maintaining at least a sensibly equal potential difference at the cell terminals. The lithium content of the electrolyte is equal to that derived from the addition of lithium fluoride in an amount between 3 and 8% by weight of the electrolyte. The electrolyte consists essentially of aluminum fluoride, sodium fluoride, calcium fluoride, and alumina. The lithium-containing compound is lithium fluoride, or lithium cryolite, or lithium aluminate, or lithium carbonate, or lithium hydroxide. During the course of operation of an electrolytic cell of the Soderberg, or preliminary baking, type for the production of aluminum, a current is passed through the electrolyte, modified by a lithium content, equal to that which comes from the addition of lithium fluoride in an amount between 3 and 8% by weight of the electrolyte. A stronger current is passed through the electrolyte, and the increased current is maintained at more than 5% over normal operation.

Okamoto, S. and others.
LOSS OF NITROGEN BY NITROGEN-CONTAINING HIGH CHROMIUM-IRON ALLOYS ON HEATING AT HIGH TEMPERATURES. Nov 61, 1000 words.
Order from HB $3.25 HB-5284

Trans. of Tetsu to Hagane (Japan) 1961, v. 47, no. 3, p. 548-550.

DESCRIPTORS: *Chromium alloys, *Iron alloys, Processing, *Nitrogen, Separation, Heat treatment, *Steel Temperature, Metal powders.

Palacios Reparaz, J. M.
RESIDUAL ELEMENTS IN STEELS. [1961].
Order from BISI £7 BISI-2347

Slightly abridged trans. of Inst[ituto del] Hierro [y del] Acero (Spain) 1961, v. 14, apr, spec. no., p. 397-419.

DESCRIPTORS: *Steel, Impurities.

Schenck, H., Taxhet, H., and Schmitz, K. G.
EXPERIENCE IN THE SAMPLING OF LIQUID STEEL WITH THE VACUUM PIPETTE FROM THE ELECTRIC FURNACE AND THE INGOT MOLD. Dec 61, 3400 words.
Order from HB $9.75 HB-5426

Trans. of Stahl und Eisen (West Germany) 1961, v. 81, no. 23, p. 1643-1649.

DESCRIPTORS: Sampling, *Liquid metals, *Steel, Vacuum apparatus, Pipettes, Electric furnaces, Silicon compounds, Dioxides, Gases.

Sekiguchi, Harujiro and Kobayashi, Takuro.
PREVENTION OF FORMATION OF HARDENED PART, AND ELIMINATION OF ALREADY HARDENED PART IN WELDING HEAT AFFECTED ZONE OF HIGH TENSILE ALLOY STEEL PLATE, tr. by Staley. Rept. 4 on Fundamental Research on Welding of Special Steels. [1959] 24p. (figs. charts tables omitted). H-3860 A.
Order from OTS or SLA $2.60 60-21059

Trans. of [Yosetsu Gakkai-Shi] (Japan) 1950, v. 19, p. 6-21.

DESCRIPTORS: *Alloys, *Steel, *Metal plates, *Welding, Hardening, Heat treatment, Fracture (Mechanics), Tensile properties.

The cracks that form near the degenerated part of the alloy steel as a result of the welding are caused by the changes that take place in the metal, and by the internal tensions that are caused as a result of welding. A relation exists between the cracks, and the position of the beads. This type of crack can be prevented by the proper post-heating process. In the case of steels that have a tendency to harden more than others, then the cracks cannot be prevented by any pre-heating. Even in case of the alloy steel, it's hardening can be prevented by maintaining the heat of the metal for some time after the weld operation.

Veinik, A. I.
THEORY OF SPECIAL KINDS OF CASTINGS, CHAPS. 1-4, 11-12. 27 Oct 61 [243]p. MCL-177
Order from OTS or SLA $16.00 62-13572

Unedited rough draft trans. of mono. Teoriya Osobykh Vidov Lit'ya, Moscow, 1958, p. 15-142 and 278-290.

DESCRIPTORS: *Castings, Theory, Thermodynamics, *Steel castings, *Cast iron, Steel tubing, Vacuum systems, Freezing, Cylindrical bodies, Automation, Selection, Quality control, Machines, Industrial equipment, Fluid flow, Liquid metals, Fracture (Mechanics), Convection, Heat transfer, Thermal radiation.

Contents:
Continuous casting
Flat (pancake-type) casting
Cylindrical casting
Hollow cylindric casting
Method of vacuum suction
Freezing-on method.

Wahlster, M.
STUDIES OF THE REDUCIBILITY OF ORE PELLETS, PT. II. Dec 61, 2600 words.
Order from HB $7.25 HB-5359

Trans. of Technisch Mitteilungen Krupp (West Germany) 1961, v. 19, no. 2, p. 7-16.

DESCRIPTORS: *Iron, *Ores, *Pellets, Reduction.

Structural Metallurgy and Corrosion

Baron, V. V., Ivanova, K. N., and Savitskii, E. M.
STRUCTURE DIAGRAM AND SOME PROPERTIES OF ALLOYS OF THE SYSTEM NIOBIUM-MOLYBDENUM-VANADIUM. 21 Aug 61 [18]p. (5 figs. 1 table omitted) 8 refs. MCL-1170/1. AD-264 610
Order from OTS or SLA $1.60 61-28814

Unedited rough draft trans. of Akademiya Nauk SSSR. Otdelenie Tekhnicheskikh Nauk. Izvestiya: Metallurgiya i Toplivo, 1960, no. 4, p. 143-149.

DESCRIPTORS: *Niobium alloys, *Molybdenum alloys, *Vanadium alloys, Alloys, Phase studies, Microstructure, Mechanical properties, Corrosion, Oxidation, Resistance, Hardness, Temperature, Metallurgy.

The alloys with the highest high-temperature corrosion resistance were niobium alloys with the following composition: in binary systems at 1000° - alloys with approximately 5% Mo and 5% V; at 1200° - with 15.4% Mo and 2.4% V; internary systems - alloys with 5% Mo, 2.8% V and 5% Mo, 5.6% V. (Extracted)

Karpenko, G. V.
FAILURE OF METALS IN CONTACT WITH LIQUID METAL (Pro Ruinubannya Metaliv pri Ikh Kontakti z Ridkim Metalom). Nov 60 [15]p. 14 refs. MCL-88; AD-255 358.
Order from OTS or SLA $1.60 61-19546

Trans. of Prykladna Mekhanika (USSR) 1957, v. 3, no. 1, p. 13-18.

DESCRIPTORS: *Liquid metals, *Metals, *Failure (Mechanics), Machines, Stresses, Aluminum, Mercury.

An investigation was made of the effect of mercury on the durability of brass and duraluminum. Mercury amalgamates the metals, the amalgamation begins with the moistening (adsorption) of a surface, which then turns into a diffusion (the penetration of the atoms of mercury into the lattice of the metal). Mercury reduces the durability of brass and duraluminum. Contact of the brass samples with mercury before their fatigue test lowered their durability in air as well as in mercury. Rolling of the brass and duraluminium samples considerably increased their durability in mercury and eliminated the effect of the preliminary contact of the brass samples with mercury on the fatigue strength of brass. This indicated that the decrease of durability is due to the mercury penetrating during the process into surface defects of the metal.

Saltykov, S. A.
STEREOMETRIC METALLURGY, PT. II. 6 Oct 61 [296]p. 277 refs. MCL-905, pt. 2. AD-267 701
Order from OTS or SLA $18.50 62-15203-2

Unedited rough draft trans. of mono. [Stereometricheskaya Metallografiya, 2d rev. ed., Moscow, 1958] chaps. 4-6 and bibl.

DESCRIPTORS: Metals, Alloys, *Stereochemistry, *Molecular structure, Microanalysis, *Microstructure, Quantitative analysis, *Particles.

Contents:
Determining the quantity of microparticles per unit volume of metal or alloy
Quantitative determination of form of microparticles
Stereometric structure and properties of metals and alloys.

Schrader, A.
THE RELATIONSHIP BETWEEN THE ETCHING OF STEEL SPECIMENS, PLASTIC REPLICAS AND MICROGRAPHS. Jan 62.
Order from BISI £2 15s BISI-2549

Trans. of Zeitschrift [für] Wissenschaftliche Mikroskopie [und Mikroskopische Technik] (West Germany) 1952, v. 60, p. 309-316.

DESCRIPTORS: *Photoengraving, *Steel, *Plastics, Optical equipment, Ferrites, Crystals, Heat treatment.

Skulari, P.
THE MEASUREMENT OF INTERNAL STRESSES OF THE SECOND TYPE. Jan 51 [11]p. 9 refs.
Order from SLA $1.60 60-18820

Trans. of mono. Druhy Pracovni Sjezd Hornich a Hutnich Inzenyru, n.p., May 47, p. 127-144.

DESCRIPTORS: *Metals, *Stresses, Measurement, X-rays, Elasticity, Lattices, *Steel, Single crystals, Plasticity, *Deformation, Failure (Mechanics)

Internal stress of the second type can be determined quantitatively as well as qualitatively by X-ray methods. By using the theory of the structure of matter and the theory of elasticity, it has been found possible to relate the change in lattice constant brought about by internal stress of the second type to line breadth of the $K\alpha_2$ α_1 doublet, and the change in the Bragg angle. In order to calculate the magnitude of internal stresses of the second type the equation given by Cagliotti-Sachs was developed. This gives a relationship for the dependence of changes in the value of the lattice constant on internal stresses. The following are the most suitable conditions for obtaining stress-relief in a low-carbon steel: temperature 460°C, time 1 hr. and air cooling. (Author)

Udyma, P. G.
ALL-UNION SCIENTIFIC AND TECHNICAL CONFERENCE ON ANTI-CORROSION TECHNIQUES. 23 Oct 61 [7]p. JPRS: 10793.
Order from OTS or SLA $1.10 62-13239

Trans. of Vsesoyuznoe Khimicheskoe Obshchestvo. Zhurnal (USSR) 1960, v. 5, no. 6, p. 697-699.

DESCRIPTORS: *Corrosion inhibition, Conferences, Scientific research, Chemical industry, Chemical engineering, Metallurgy, Paints, Oils, Coatings.

NUCLEAR PHYSICS AND NUCLEAR CHEMISTRY

ISOTOPES AND RADIATION IN CHEMISTRY (Izotopy i Izlucheniyu v Khimii). Nov 61, 478p. 674 refs.
Order from OTS $5.50 AEC-tr-4497

Trans. of Vsesoyuznaya Nauchno-Tekhnicheskaya Konferentsiya po Primeneniyu Radioaktivnykh i Stabil'nykh Izotopov i Izluchenii v Narodnom Khozyaistve i Nauke, Moscow, 4-12 Apr 57. Trudy, 1958, 377p.
Another trans. of p. 85-105 is available from OTS or SLA $3.60 as 61-27158, MCL-582 [1961] [37]p.

DESCRIPTORS: Conferences, *Isotopes, *Radioactive isotopes, Chemistry, *Radiochemistry, Physical chemistry, Chemical reactions, Reaction kinetics, *Labeled substances, Synthesis.

The All-Union Scientific and Engineering Conference on the use of radioactive and stable isotopes and radiation in the national economy and science, convened by the Academy of Sciences of the USSR and the Chief Atomic Energy Administration of the Councils of Ministers of the USSR, was held in Moscow from April 4 to 12, 1957. This edition of the papers of the chemical section contains, in addition to the reports given at the Conference, several others which were not delivered. All the reports given by foreign (French, U.S., and Indian) specialists are included. The papers are arranged under 5 headings, as follows: (1) kinetics and mechanism of chemical reactions, 10 papers; (2) radiation chemistry, 7 papers; (3) analytical chemistry and physico-chemical analysis, 18 papers; (4) radiochemistry, 8 papers; and (5) chemical methods of preparation of labelled compounds, 8 papers.

PRODUCTION OF ISOTOPES: LARGE GAMMA-RAY INSTALLATIONS: RADIOMETRY AND DOSIMETRY: [SELECTED ARTICLES] (Poluchenie Izotopov; Moshchnye Gamma-Ustanovki; Radiometriya i Dozimetriya). Aug 61, 46p. 31 refs.
Order from OTS $1.25 AEC-tr-4544

Trans. of mono. Trudy Vsesoyuznogo Nauchno-Tekhnicheskoi Konferentsii po Primeneniya Radioaktivnykh i Stabil'nykh Izotopov i Izluchenii v Narodnom Khozyaistve i Nauke [held at] Moscow, 4-12 Apr 57, Moscow, 1958, p. 169-209.

DESCRIPTORS: *Radioactive isotopes, Isotopes, *Gamma rays, *Radiobiology, Medicine, *Cobalt, *Radiochemistry laboratories, *Cereals, *Food, Preservation, Insect control.

Contents:
Tasks and trends in the field of powerful gamma-installation construction, by V. I. Sinitsyn
Principles and techniques in the use of radioactive isotopes as powerful gamma sources in radiobiology and medicine, by A. V. Bibergal and others
Installation for radiation chemistry research with a Co^{60} gamma radiation source with an activity of 21,000 gram-equivalents of radium, by A. Kh. Breger and others
The cobalt emitter laboratory, by A. V. Babushkin and others
The sources of ionizing emissions for work in radiation chemistry, by V. I. Zatulovskii
The design of an experimental semi-industrial installation for radiation disinfestation of grain, by E. S. Pertsovskii and others
Gamma emitters in the preservation of food products, by N. D. Chernyaev.

Alikhanyan, A., Vaysenberg, A. and others.
VARITRONEN IN DER HARTEN KOMPONENTE DER KOSMISCHEN STRALUNG (Varitrony v Zhestkoy Komponente Kosmicheskikh Luchey). [1961] 4p. 2 refs. [DSIR LLU] M2119 (text in German).
Order from OTS or SLA $1.10 61-13617

Trans. in German of Akademiya Nauk SSSR. Doklady, 1948, v. 61, no. 1, p. 39-42.

DESCRIPTORS: Cosmic rays, *Measurement, *Energy.

Druin, V. A., Polikanov, S. M., and Flerov, G. N.
FISSION DES NOYAUX PARS IONS AZOTE ACCÉLÉRÉS [Delenie Yader Deistviem Uskorennykh Ionov Azota] (Fission of Nuclei by Accelerated Nitrogen Ions) tr. by B. de Trezvinsky. [1961] [15]p. 5 refs. CEA Trans. no. R 834 (text in French).
Order from OTS or SLA $1.60 61-15765

Trans. in French of #Zh[urnal] Eksper[imental'noi i] Teor[eticheskoi] Fiz[iki] (USSR) 1957, v. 32, no. 6, p. 1298-1304.

DESCRIPTORS: *Nuclei, *Nitrogen, *Ion accelerators, *Fission, Nuclear reactions.

Isotope Separation

Rozen, A. M.
THEORY OF ISOTOPE SEPARATION IN COLUMNS, PT. I. 28 Nov 61 [245]p. JPRS: 11213, pt. 1.
Order from OTS or SLA $16.00 62-13360-1

Trans. of mono. Teoriya Razdeleniya Izotopov v Kolonnakh, Moscow, 1960, preface, symbols, chaps. 1-7.

DESCRIPTORS: *Isotope separation, Fractionation, Separation, Exchange reactions, Thermal diffusion separation, Thermal diffusion, Diffusion, Gas diffusion, Centrifuge separation, Electrolysis, Gas chromatography, Isotopes, Theory.

Contents:
Characteristics of the process of separation in a column
Distillation
Isotope exchange
Thermal diffusion
Mass diffusion
Other methods of separation
On the effectiveness of various methods of separation.

Rozen, A. M.
THEORY OF ISOTOPE SEPARATION IN COLUMNS, PT. II. 28 Nov 61 [326]p. 237 refs. JPRS: 11213, pt. 2,
Order from OTS or SLA $19.75 62-13360-2

Trans. of mono. [Teoriya Razdeleniya Izotopov v Kolonnakh, Moscow, 1960] chaps. 8-12, appendices, bibliography.

DESCRIPTORS: *Isotope separation, Fractionation, Exchange reactions, Thermal diffusion separation, Gas diffusion, Diffusion, Centrifuge separation, Electrolysis, Heavy water, Production, Hydrogen, Ammonia, Separation, Lithium, Uranium, Isotopes, Numerical methods and procedures, Theory.

Contents:
The stationary state of individual columns and the cascade of columns as a whole
Some premises of the general theory of separation
Optimum conditions of separation
Nonstationary processes in single columns and a cascade
Examples of calculation of separatory setups.

Nuclear Engineering and Power

ATOMIC ENERGY, 1961, VOL. 10, NO. 4: SELECTED ARTICLES. 19 Sep 61 [90]p. 60 refs. MCL-1208.
Order from OTS or SLA $8.10 62-13570

Trans. of #Atomnaya Energiya (USSR) 1961, v. 10, no. 4, p. 343-346, 372-373, 377-392, 396, 403-404, 406-407, 412-415, 420-422.

DESCRIPTORS: *Atomic energy, Periodicals, Thermionic converters, Tests, Thermionic emission, Uranium, Plutonium, Radioactive isotopes, Nuclei, Fission, Fission product activity, Subcritical assemblies, Neutrons, Neutron lifetime, Determination, Probability, Neutron detectors, Detectors, Neutron counters, Monochromatic light, Thermal neutrons, Neutron spectrum, Liquid metals, Turbulent flow, Heat transfer, Shafts, Torque, Sodium, Solids, Seals, Friction, Fast neutrons, Shielding, Gamma ray spectra, Compton scattering, Cesium, Gamma rays, Scattering, Numerical methods, and procedures, Uranium compounds, Borides, Synthesis, Rare earth metals, Separation, Physical chemistry, Chemical analysis, Industrial production, Control, Automation, Nuclear engineering, Ionization chambers, Design.

Contents:
Thermionic energy converters, by B. A. Ushakov
Ternary fission of U^{233}, U^{235}, Pu^{239}, and Pu^{241} nuclei, by T. A. Mostovaya
Measurement of the kinetic characteristics of a reactor by a statistical p-method, by A. I. Mogil'ner and V. G. Zolotukhin
Distribution of the number of counts recorded by a neutron detector located in a reactor, by V. G. Zolotukhin and A. I. Mogil'ner
Use of a Monochromator to measure the thermal-neutron spectra of a nuclear reactor, by Yu. Yu. Glazkov and others
Turbulent-flow heat transfer in liquid metals, by V. I. Subbotin and others
Power losses and initial shaft torque in a seal of frozen sodium, by A. V. Drobyshev and N. M. Turchin
Calculation of the passage of fast neutrons through cylindrical channels in biological shielding, by B. R. Bergel'son
Spectrum of scattered γ-radiation, by V. S. Anastasevich

Monte-Carlo calculation of the passage of γ-radiation from a plane Cs^{137} source through aluminum under conditions of barrier geometry, by A. F. Akkerman and D. K. Kaipov
Synthesis of uranium dodecaboride, by Yu. B. Paderno
A change in the activity of fission products of U^{235} and Pu^{239} with time, by F. K. Levochkin and Yu. Ya. Sokolov
News of science and technology:
Intervuz Conference on Methods of Separating Rare Metals with Similar Properties, by A. N. Zelikman
All-Union Conference on Physical-Chemical Analysis (no. 4)
Illustrative exhibit "the use of radioactive isotopes for the control and automation of industrial processes", by V. M. Patskevich and S. A. Pereplethikov
A new general-purpose chamber for working with α-, β- and γ-radioactive substances, by G. N. Lokhanin and V. I. Sinitsyn
The M-2 manipulator, by O. M. Ignat'ev.

THE AVOGADRO RSI REACTOR. [1961] 4p.
Order from STT $2.00 STT-125-69

Trans. of l 'Industrie Chimique (France) 1960 [v. 47] Nov, p. 387.

DESCRIPTORS: Reactor theory, Design, *Research reactors.

Silvestri, M.
HEAVY-WATER REACTORS COOLED BY LIGHT-STEAM AND WATER MIXTURES (Reattori ad Acqua Pesante, Refrigerati con Miscele Acqua Leggera-vapore) tr. by D. A. Sinclair. 1961, 9p. NRCC Technical Trans. 985.
Order from NRCC $0.50 NRCC C-3812

Trans. of Energia Nucleare (Italy) 1961, v. 8, no. 3, p. 209-212.

DESCRIPTORS: *Heavy water reactors, Power reactors, Cooling, *Reactor coolants, Reactor reactivity, Heat transfer, Hydrodynamics, Corrosion.

PHYSICS

Golovanivskii, K. S. and Kuzovnikov, A. A.
ON THE PRESSURE EXERTED BY A NONUNIFORM HIGH-FREQUENCY ELECTRIC FIELD ON POSITIVE-COLUMN GAS-DISCHARGE PLASMA.
29 Aug 61, 2p. AID rept. 61-123; AD-263 461.
Order from OTS or SLA $1.10 61-28481

Abstract trans. of #Zhurnal Tekhnicheskoi Fiziki (USSR) 1961, v. 31, no. 3, p. 343-347.

DESCRIPTORS: *Electric fields, High frequency, *Gas ionization, *Gas discharges, Plasma physics.

The effect was studied in 5-ma glow-discharge plasma in a cylindrical tube 50 cm long and 6 cm in diameter with air and with argon individually, both at a pressure of 3.7×10^{-1} mm Hg. An axially symmetric nonuniform hf electric field was created with the aid of two 7-mm-wide copper rings 1 mm apart around the discharge tube. When the hf field was turned on, plasma in the neighborhood of the rings was compressed toward the axis of the discharge. The compression effect varied directly with the applied hf voltage, increasing on a smooth curve as the frequency was varied from no effect at 1 kc to maximum effect around 100 kc and then decreasing again to no effect at about 3000 kc. The degree of compression was recorded photographically and the resulting negatives were photometrically analyzed for degree of brightness. There was a strong increase of brightness in the area of compression, and a concomitant increase in the discharge current was also observed. The effect of pressure on plasma can be due only to the electric component of a variable electromagnetic field; it is therefore the same pressure as that exerted by a standing electromagnetic wave. The increase of ionization in the compressed area is due to (1) an increase of the number of particles ionized due to acceleration of electrons in a hf electric field, and (2) the accumulation of charge carriers in the compressed area because the compressed area is no longer in contact with the walls of the tube and therefore loses fewer charged particles through contact with the walls.

Gorelik, A. G. and Mel'nichuk, Yu. V.
RELATIONSHIP BETWEEN THE FLUCTUATION SPECTRUM OF A RADAR SIGNAL AND THE MOTION OF SCATTERING PARTICLES IN METEOROLOGICAL OBJECTS. [1961] 5p.
Order from ATS $8.50 ATS-50N57R

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1961, v. 140, no. 3, p. 579-582.

DESCRIPTORS: *Radar signals, Particles, Scattering Motion, Meteorological radar.

Kudakova, R. V.
ON STABILITY IN A FINITE INTERVAL OF TIME. [1961] 8p. 3 refs.
Order from OTS or SLA $1.10 61-20047

Trans. from Akademiya Nauk Kazakhskoi SSR, Alma-Ata. Sektor Matematiki i Mekhaniki. Trudy (USSR) 1958, v. 1.

DESCRIPTORS: *Time, Stability, Analysis, *Differential equations, Real variables.

Consideration is given to a system of differential equations: $x_s = X_s(t, x_1, x_2, \ldots, x_n)$, $(s = 1, 2, \ldots, n)$ where the right hand sides are assumed to be such that through every point of the domain (H): $T_1 \leqq t \leqq T_2$, $|x_s| \leqq h$ $(T_1 \neq T_2,\ h \neq 0)$ these passes a unique solution. Assume that $X_s(t, x_1, \ldots, x_n)$ is equal to zero for $x_1 = x_2 = \ldots x_n = 0$, i.e., $x_1 = x_2 = \ldots = x_n = 0$ is the unperturbed motion of system, which is investigated for stability.

Semenov, N. N. and Dorfman [Ya.] G.
THE GREATEST PHYSICIST OF THIS COUNTRY. On the Death of A. F. Joffe, Member of the Academy; Doctor of Physical and Mathematical Sciences. 8 May 61 [20]p. (4 figs. omitted) 6 refs. MCL-887/1.
Order from OTS or SLA $1.60 61-27139

Unedited rough draft trans. of Priroda (USSR) 1960 [v. 49, no. 12] p. 32-39.

DESCRIPTORS: Photoelectric materials, Photoelectric effect, *Scientific research, *Semiconductors, *Dielectrics, Crystals, Deformation.

Serebryakova, Z. G. and Mikhailov, N. V.
INVESTIGATION OF THE MOLECULAR STRUCTURE OF SYNTHETIC FIBERS. XVI. INVESTIGATION OF THE SORPTION PROPERTIES OF POLYAMIDE FIBERS AS A FUNCTION OF THEIR STRUCTURE. [1961] [11]p. 20 refs.
Order from OTS or SLA $1.60 61-20644

Trans. of Vysokomolekulyarnye Soedineniya (USSR) 1959, v. 1, no. 2, p. 222-229.

DESCRIPTORS: *Synthetic fibers, *Molecular structure, Fibers, Adsorption, Absorption, Amides, Polymers.

It was established that sorption of water vapor by capron fiber is not connected with the magnitude of external and internal surface, but rather with terminal -CONH- groups of the polymer and occurs by a diffusion mechanism in the whole volume of the fiber. Investigation of the sorption of water vapor by polyamides of amorphous and crystalline structure has shown that these forms have different equilibrium values of sorption. However, upon changing the molecular packing of the polyamides these differences in equilibrium sorption can be made vanishingly small; which permits one to obtain the amorphous and crystalline modifications of polycaprolactam having identical sorption values. The change of physical structure (i.e., the mutual placement of chains of the degree of crystallinity) by whatever route arrived at, always leads to a change of sorption properties and opens the way to the regulation of these properties within desired limits. (Author)

Electricity and Magnetism

SOVIET WORK IN THE FIELD OF GEOMAGNETISM 22 Nov 61 [29]p. 3 refs. JPRS: 11207.
Order from OTS or SLA $2.60 62-13615

Trans. of Geomagnetizm i Aeronomiya (USSR) 1961, v. 1, no. 4, p. 588-593 and 623-626.

DESCRIPTORS: *Terrestrial magnetism, Atlantic Ocean, Indian Ocean, Magnetic fields, Earth, Electromagnetic fields, Conferences.

Contents:
On the secular variation of the magnetic field in the Atlantic and Indian Oceans, by M. I. Ivanov
Conference on rapid variations of the earth's electromagnetic field and earth currents.

Belov, K. P.
MAGNETIC TRANSITIONS. Nov 61, approx. 250p.
Order from CB $12.50

Trans. of mono. [Magnitnye Prevrashcheniya, Moscow, 1959].

DESCRIPTORS: *Magnetism, Thermodynamics, *Phase transitions, *Magnetic materials, *Transition temperature, *Ferromagnetic materials, Computers, Control systems, Solid state physics, Antiferromagnetism.

Busch, G. and Vogt, O.
MAGNETIC SUSCEPTIBILITY OF LIQUID SELENIUM AND TELLURIUM (Magnetische Suszeptibilität vom Flüssigen Selen und Tellur) tr. by D. A. Sinclair. 1961, 5p. NRCC Technical Trans. 983.
Order from NRCC $0.50 NRCC C-3765

Trans. of Helvetica Physica Acta (Switzerland) 1957, v. 30, p. 224-227.

DESCRIPTORS: Liquids, *Selenium, *Tellurium, *Magnetic susceptibility.

Kneller, E.
THE INFLUENCE OF PLASTIC DEFORMATION ON THE MAGNETIC PROPERTIES OF FERROMAGNETIC CRYSTALS. Nov 61.
Order from BISI £6 5s BISI-2483

Trans. of German language mono. Arbeitsgemeinschaft Ferromagnetismus, Berichte, n.p., 1958, p. 33-42.

DESCRIPTORS: *Ferromagnetic crystals, Magnetism, Crystals, *Deformation, Plastic flow.

Optics

Davydov, A. S.
THE STRUCTURE OF THE LIGHT ABSORPTION BAND IN MOLECULAR CRYSTALS (Struktura Polosy Pogloshcheniya Sveta v Molekulyarnykh Kristallakh) tr. by A. Pingell. 29 Sep 61, 18p. 4 refs. NRL trans. no. 867.
Order from OTS $0.50 61-31685

Trans. of Akademiya Nauk URSR, Kiev. Instytut Fizyky. Trudy, 1952, v. 3, p. 36-51.

DESCRIPTORS: *Crystals, Molecules, Vibration, *Light, Absorption, Energy, Excitation, Anthracenes, Refractive index, Electromagnetic waves.

Heynacher, Erich.
OPTICAL "DIFFRACTION" INTEGRATORS FOR STUDIES OF THE IMAGE QUALITY. [1961] 7p. 7 refs.
Order from SLA $1.10 61-18669

Trans. of Zeitschrift für Instrumentenkunde (Germany) 1960, v. 68, no. 3, p. 64-67.

DESCRIPTORS: *Optical images, Optical instruments, Optical systems, Illumination, Photometers, Electron beams, Focusing, *Diffraction.

Solid State Physics

Adamczewski, I.
THEORETICAL PRINCIPLES OF ELECTRICAL CONDUCTIVITY IN LIQUID DIELECTRICS. [1961] 15p.
Order from ATS $30.65 ATS-65N57P

Trans. of Postepy Fiz[yki] (Poland) 1958, v. 9, no. 3, p. 261-279.

DESCRIPTORS: *Electrical conductance, *Dielectrics, Liquids.

Fridkin, V. M.
ELECTROPHOTOGRAPHY BY MEANS OF PHOTOELECTRETS. [1961] [6]p. 4 refs.
Order from OTS or SLA $1.10 62-10357

Trans. of #Kristallografiya (USSR) 1957, v. 2, no. 1, p. 130-133.
Another trans. is available from ATS $7.25 as ATS-75L29R [1958] 5p.

DESCRIPTORS: *Electrophotography, *Electrets, Dielectrics, Sulfur, Single crystals, Anthracenes.

A description is given of a method for obtaining images on photoelectrets consisting of polycrystalline sulfur and single-crystal sulfur and anthracene. The first electrophotographs on photoelectrets made of polycrystalline sulfur are presented. A sensitometric method is suggested for investigating the photoelectret state. (Author)

Karakuzhan, E. I. and Stafeev, V. I.
MAGNETIC DIODES. [1961] [17]p. 9 refs.
Order from OTS or SLA $1.60 61-20495

Trans. of #[Fizika Tverdogo Tela] (USSR) 1961, v. 3, no. 3, p. 677-686.

DESCRIPTORS: *Semiconductors, *Diodes, *Magnetic fields, Intensity, Electrical effects.

The dependence of the semiconductor diode current on the intensity of a magnetic field is examined. It is shown that in diodes with a greater ratio of d/L for high injection levels, the current variation can be tens of times greater than the variations in the conductivity of a monocrystal. The magnetic field changes the concentration of carriers not in equilibrium, determining the conductivity of magnetic diodes. This new effect is due to the variations in the volume length of the diffusion displacement in the magnetic field. Results are presented of experimental investigation of diodes with varying base thicknesses, confirming the basic conclusions of the theory. There is proposed the geometry of magnetic diodes with high magnetic sensitivity. In the field H = 19 300 oersted there are obtained changes in the direct current of the magnetic diode exceeding 200 times. (Author)

Kitaigorodskii, A. I.
ORGANIC CHEMICAL CRYSTALLOGRAPHY. Nov 61, approx. 550p.
Order from CB $17.50

Trans. of mono. [Organicheskaya Kristallokhimiya, Moscow, 1955, 560p.].

DESCRIPTORS: *Organic compounds, *Crystal structure, Crystals.

Mukimov, S. M., Krylova, N. I., and Bergman, A. G.
AN INVESTIGATION OF THE INTERACTION OF MELTS OF THE SULFATES OF SODIUM, POTASSIUM, MAGNESIUM AND CALCIUM, tr. by M. W. Nathans. [1961] 22p. 4 refs.
Order from OTS or SLA $2.70 UCRL Trans-568(L)

Trans. of Akademiya Nauk Uzbekskoi SSR, Tashkent. Institut Khimii. Trudy, 1949, no. 2, p. 94-112.

DESCRIPTORS: *Sulfates, *Sodium compounds, *Magnesium compounds, *Potassium compounds, *Calcium compounds, Crystallization, Phase transitions, Chemical analysis, Melting, Thermodynamics, Chemical equilibrium, Sulfur compounds, Metallic crystals.

The question has been considered of the differences in the compositions of compounds of sulfates in equilibrium with aqueous solutions and of those formed by the solidification of melts of the sulfates of Na, K, Ca, Mg. The surface of crystallization of the ternary system K_2SO_4-$MgSO_4$-$CaSO_4$ was determined. Contrary to the data of Muller (1910) and of Grahmann (1913) there are two rather than one compound in the system K_2SO_4-$CaSO_4$. These compounds probably have the composition $3CaSO_4 \cdot K_2SO_4$ and $2CaSO_4 \cdot K_2SO_4$. There may exist yet another compound, $CaSO_4 \cdot K_2SO_4$, or a polymorphic modification of $2CaSO_4 \cdot K_2SO_4$ in the neighborhood of 780°; this phase apparently appears on the surface of crystallization of the ternary system as a small independent field of crystallization in the interval 780-730°. Within the system a large field of a ternary compound has been established with an upper limiting curve having a transition point at 1018° on the line of composition 50% K_2SO_4-50% $MgSO_4$-$CaSO_4$, according to which it may have the composition $K_2SO_4 \cdot MgSO_4 \cdot nCaSO_4$, where n is probably 3 or 4. (Author)

Theoretical Physics

Miller, M. A.
MOTION OF CHARGED PARTICLES IN HIGH-FREQUENCY ELECTROMAGNETIC FIELDS, tr. by Lydia Venters. 28 July 61, 20p. 17 refs.
Order from OTS or SLA $1.60 AEC-tr-4750

Trans. of Izvest[iya] Vysshikh Ucheb[nykh] Zavedenii. Radio [fisika] (USSR) 1958, v. 1, no. 3, p. 110-[123].

DESCRIPTORS: Motion, *Particles, High frequency, *Electromagnetic fields, Control, Velocity, Particle trajectories, Particle beams, Focusing, Magnetic fields, Electric fields, Waveguides, Plasma physics.

The motion of a single charged particle in a non-uniform high-frequency electromagnetic field is analyzed. It is shown that on an average with relation to time this motion under certain conditions may be considered to be potential. The generalization of the averaged motion equations to the case of a simultaneous operation of a constant magnetic and high-frequency electromagnetic fields is carried out. Some individual problems are solved: (1) the reflection of a particle from the high-frequency barrier; (2) focusing of the rectilinear beam of charged particles by the fields of traveling and standing electromagnetic waves; and (3) localization of the particles in a limited space region. (Author)

Salamandre, G. D., Bazhenova, T. V. and others.
CERTAIN METHODS OF STUDYING HIGH-SPEED PROCESSES AND THEIR APPLICATION TO THE STUDY OF THE FORMATION OF A DETONATION WAVE, CHAPS. 1-2. 2 Nov 61 [90]p. MCL-1350.
Order from OTS or SLA $8.10 62-13582

Unedited rough draft trans. of mono. Nikotorye Metody Issledovaniya Bystroprotekayushchikh Protsessov i Ikh Primenenie k Izucheniyu Formirovaniya Detonatsionnoi Volny, Moscow, 1960, p. 5-57.

DESCRIPTORS: *High speed photography, Electronic circuits, Electrical conductance, *Detonation waves, Sparks, Measurement, Pressure, Electric discharges, High speed cameras, Control systems, Synchronizers, Shock waves, Flame propagation, Ballistics, Supersonic flow, Optics, Gases, Combustion, Equations.

Contents:
High-speed spark photography
Procedure for measuring variable pressures containing gasdynamic discontinuities.

Thermodynamics

THESES, REPORTS AND PAPERS AT THE CONFERENCE ON HEAT AND MASS TRANSFER. 16 Nov 61 [148]p. MCL-1407; AD-267 775.
Order from OTS or SLA $11.00 62-15202

Unedited rough draft trans. of mono. Tezisy Dokladov i Soobshchenii na Soveshchanii po Teplo- i Massoobmenu [held at] Minsk, 5-9 June 61, Minsk, 1961, p. 1-100.

DESCRIPTORS: Conferences, Theses, Scientific reports, *Heat transfer, *Mass transfer, Convection, Heat exchangers, Design, Numerical methods and procedures.

Abstracts (or summaries) are presented of papers on (1) analytical methods of solving problems in heat and mass transfer (7 papers); (2) computation methods and modeling of heat- and mass-transfer processes (7 papers); (3) general problems in heat transfer (19 papers); (4) heat and mass transfer in the case of change in phase (14 papers); (5) heat and mass transfer in chemical conversions (5 papers); (6) heat and mass transfer in drying processes and in construction designs (25 papers); and (7) thermophysical characteristics of various materials, heat carriers, and determination methods for these characteristics (9 papers).

Adrianov, V. N. and Shorin, S. N.
RADIATIVE TRANSFER IN THE FLOW OF A RADIATION MEDIUM. [1961] [23]p. 11 refs.
Order from OTS or SLA $2.60 61-20703

Trans. of Akademiya Nauk SSSR. O[tdelenie] T[ekhnicheskikh] N[auk]. Izvestiya, 1958, no. 5, p. 46-[53].

DESCRIPTORS: Fuels, Combustion, Heat exchangers, High temperature research, Boilers, Ovens, Industrial equipment, Surfaces, Velocity, Specific heat, Absorption, Scattering, *Heat transfer, Hydrodynamics, *Gas flow, *Thermal radiation.

The problem of energy exchange by radiation within a moving medium is solved for the case of non-uniform speeds and temperatures across the stations of a radiating medium flowing through cylindrical and plane channels. This model is an excellent approximation to the shape of actual heat-exchanger components. (See also 61-20714)

Artyukh, L. Yu., Vulis, L. A., and Kashkarov, V. P.
FLOW ABOUT A PLATE OF A GAS BURNING AT THE PLATE SURFACE, tr. by B. W. Kuvshinoff. 30 Aug 61, 9p. 7 refs. APL/JHU TG 230-T246.
Order from OTS or SLA $0.50 61-31682

Trans. of Inzhenerno-Fizicheskii Zhurnal (USSR) 1961 [v. 4] no. 3, p. 39-45.
An abstract trans. is available from OTS or SLA $1.10 as 61-23489, AID-61-80, 23 May 61, 3p.

DESCRIPTORS: *Gas flow, *Boundary layer, *Combustion, *Compressible flow, Heat exchange, Surface properties, Temperature.

The combustion of a gas at the surface of a plate around which it is flowing at high velocity is considered. Various surface conditions are analyzed, as well as the velocity, temperature, and concentration contours in the boundary layer. The case considered is more general than the one discussed earlier concerning ignition of a flowing incompressible fluid. New critical conditions for ignition and extinction associated with high velocity flow are given. (Applied Physics Lab. abstract)

Ilarionov, V. and Ozerov, R.
A METHOD FOR A MORE PRECISE DETERMINATION OF THERMAL EFFECT TEMPERATURES ON THERMOGRAMS. [1961] 2p.
Order from ATS $3.25 ATS-66N57R

Trans. of #Zavodskaya Laboratoriya (USSR) 1958, v. 24, no. 4, p. 434-435.
DESCRIPTORS: *Temperature, Determination.

Lovachev, L. A.
THEORY OF CHAIN-THERMAL FLAME PROPAGATION. III. EFFECT OF THE COEFFICIENT OF TRANSFER ON THE FLAME PROPAGATION RATE, tr. by B. W. Kuvshinoff. 20 Sep 61, 6p. 6 refs.
APL/JHU TG 230-T250.
Order from OTS $0.50 61-31676

Trans. of #Akademiya Nauk SSSR. Otdelenie Khimicheskikh Nauk. Izvestiya, 1960, no. 8, p. 1354-1357.

DESCRIPTORS: *Flame propagation, *Flames, Diffusion, Methanes, Oxygen, Heat transfer measurement, Combustion, Fuels, Mixtures, *Chain reactions, Propagation.

A relation was found for determining the dependence of the flame propagation rate on the diffusion coefficient of the active centers and the heat conductivity of the fuel mixture. The relation is used for calculating the theoretical relation of flame propagation rates for three different stoichiometric methane-oxygen mixtures. The theoretical relations for flame propagation rates are in good agreement with those found empirically. (Author) (See also 60-41490, 61-23053)

Sirota, A. M. and Mal'tsev, B. K.
DONNÉES EXPÉRIMENTALES SUR LA CHALEUR SPÉCIFIQUE DE LA VAPEUR D'EAU SOUS DES PRESSIONS DE 300 À 500 ATMOSPHÈRES ABSOLUES ET À DES TEMPÉRATURES DE 500 A 600°C (Eksperimental'nye Dannye po Teploemkosti Vodyanogo para pri Davleniyakh 300-500 ata i Temperaturakh 500-600°C) [Experimental Data for the Specific Heat of Steam at Pressures of 300-500 atm. and Temperatures of 500-600°C] tr. by B. de Trezvinsky.
3 Oct 61 [6]p. (Russian text included) 3 refs.
CEA Trans. no. R 1410 (text in French).
Order from OTS or SLA $1.10 62-13824

Trans. in French of Teploenergetika (USSR) 1960, v. 7, no. 10, p. 67-68.
Translations in English are available from INFOSERV $2.00 as INFOSERV TR-102 [1960] and from OTS or SLA $1.10 as 61-19697, RTS-1826, Apr 61 [4]p.
DESCRIPTORS: *Steam, *Specific heat, Pressure, Temperature.

RESEARCH METHODS, TECHNIQUES AND EQUIPMENT

AT THE GENERAL MEETINGS OF THE DEPARTMENTS OF THE ACADEMY OF SCIENCES USSR. 29 Nov 61 [54]p. JPRS: 11369.
Order from OTS or SLA $5.60 62-13666

Trans. of Akademiya Nauk SSSR. Vestnik, 1961 [v. 31] no. 4, p. 27-57.
An abstract trans. (p. 40-45: Meeting of the Division of Biological Sciences) is available from OTS or SLA $1.10 as 61-27705, AID-61-106, 11 July 61, 2p.

DESCRIPTORS: Scientific organizations, Symposia, *Scientific research.

DECISIONS OF THE PRESIDIUM OF THE ACADEMY OF SCIENCES OF THE UKRAINIAN SSR REGARDING PLANS FOR SCIENTIFIC ACTIVITY IN THE YEAR 1961 (U Prezidiyi Akademiyi Nauk URSU). 22 Aug 61 [11]p. JPRS: 9943.
Order from OTS or SLA $1.60 61-27868

Trans. of Akademiya Nauk URSR [Kiev]. Dopovidi, 1961, no. 4, p. 538-541.

DESCRIPTORS: *Scientific research, Mathematics, Thermonuclear reactions, Particles, Nuclear physics, Solid state physics, Cybernetics, Electronics, Metallurgy, Automation, *Industrial research.

FOREIGN DEVELOPMENTS IN MACHINE TRANSLATION AND INFORMATION PROCESSING, NO. 49. 21 Oct 61 [42]p. JPRS: 10597.
Order from OTS or SLA $4.60 62-13217

Trans. of Konferentsiya po Obrabotke Informatsii, Mashinnomu Perevodu i Avtomaticheskomu Chteniyu Teksta. Doklady (USSR) 1961, no. 5 (2 reports).

DESCRIPTORS: Data, Processing, *Machine translation, Language, Vocabulary, Geometry, Data storage systems

Contents:
Soviet research into geometric language for machine translation, and information retrieval
I. Rules for generating sentences in a standardized language of geometry, by E. V. Paducheva
II. Some possibilities of applying S. R. Rangathan's classification system to the organization and retrieval of information, by B. V. Yakishun and others.

IN THE PRESIDIUM OF THE ACADEMY OF SCIENCES UkSSR. 23 Aug 61 [12]p. JPRS: 9874
Order from OTS or SLA $1.60 61-27858

Trans. of Akademiya Nauk URSR, Kiev. Dopovidi, 1961, no. 2, p. 251-255.

DESCRIPTORS: *Scientific research, *Biology, Plants, Parasitology, Animals, Microbiology, Biochemistry, Ecology, Marine biology, Genetics, Radioactive isotopes, Industrial research.

NEWS OF SOVIET AND BLOC SCIENCES [SELECTED ARTICLES]. 25 Oct 61 [26]p. JPRS: 10769.
Order from OTS or SLA $2.60 62-13258

Trans. of Akademiya Nauk SSSR. Vestnik, 1961, [v. 31] no. 4, p. 105-110, 113-114; no. 6, p. 86; ##Akademiya Nauk SSSR. Sibirskoe Otdelenie. Izvestiya, 1961, no. 4, p. 116-122; #Atomnaya Energiya (USSR) 1961, v. 10, no. 5, p. 549-551.
##Another trans. is available from OTS $0.50 as 61-31653, JPRS-10494, 9 Oct 61, 10p.

DESCRIPTORS: *Scientific research, *Scientific organizations, USSR, Bulgaria, Siberia, Conferences, Social sciences, Electricity, Transmission, Transmission lines, Organic compounds, Luminescence, Absorption, Botanists, Vietnam, Seeds, Radiation effects.

Contents:
Award of gold medal imeni S. I. Vavilov to E. V. Shpol'skii
##Scientific meetings and conferences [by V. G. Fomin and others]
Scientific visit to Bulgaria, by E. N. Pavlovskii
Soviet botanists in Vietnam, by A. L. Takhtadzhyan
In the Presidium of the Academy of Sciences USSR
Conference on the pre-sowing irradiation of seeds, by V. M. Patskevich.

Aizerman, M. A.
CYBERNETICS AND THE AUTOMATION OF PRODUCTION (Kibernetika i Avtomatizatsiya Proizvodstva). 26 June 61 [42]p. JPRS: 9487.
Order from OTS or SLA $4.60 61-23625

Trans. of [Vsesoyuznoe Obshchestvo po Rasprostraneniyu Politicheskikh i Nauchnykh Znanii]. Seriya 4 (USSR) 1960, no. 12, 32p.

DESCRIPTORS: *Cybernetics, *Automation, Production, Industrial research, Industrial equipment, *Computers, *Mathematical logic, *Control systems, Probability.

Contents:
What is cybernetics
Automatic search devices for specified parameter values
Automatic search devices for optimum values of parameters
The application of extremum-regulators for industrial automation
Application of "artificial memory" in industrial automation
Devices of logical action and computing machines
Cybernetics without electronics
Conclusions.

Kitov, A.
CYBERNETICS IN THE CONTROL OF THE ECONOMY. 25 Oct 61 [12]p. (1 photo omitted). JPRS: 10781.
Order from OTS or SLA $1.60 62-13271

Trans. from Ekonomicheskaya Gazeta (USSR) 1961 [no. 4] p. 9-11.

DESCRIPTORS: *Cybernetics, Scientific organizations, *Control, *Economic conditions, Industrial production, Automation, Management engineering, Computers, Construction.

Zyuskin, N. M.
PHOTOGRAPHY OF LUMINESCENCE IN REPRODUCTION TECHNIQUES. 13 Sep 61, 12p. (8 figs. omitted) 8 refs. JPRS: 8876.
Order from OTS $0.50 61-31689

Trans. of Zhurnal Nauchnoi i Prikladnoi Fotografii i Kinematografii (USSR) 1960, v. 5, no. 4, p. 274-279.

DESCRIPTORS: *Luminescence, *Photography, Color photography, Ultraviolet radiation, Infrared photography.

Communication Theory

HERALD OF COMMUNICATIONS, 1958, NO. 11(224). 22 Oct 61 [141]p. JPRS: 7016.
Order from OTS or SLA $11.00 62-13030

Trans. of Vestnik Svyazi (USSR) 1958 [v. 18] no. 11(224) including covers.

DESCRIPTORS: *Communication systems, *Communications theory, *Communication equipment, Periodicals Automation, Economics, Humidity sensitive elements, Phase detectors, Television receivers, Telegraph systems, Radio communication systems, Radio broadcasting, Rural areas, Television communication systems, Parabolic antennas, Antennas, Radio relay systems, Signal-to-noise ratio, Transistors, Radio repeaters, Reinforced concrete, Telephone communication systems, Postal systems, Personnel, Tests, Inventions, Multimeters, Radio transmitters, Cooling, Relays, Sliding contacts, Cleaning

Contents:
Production processes for telegraphic communications facilities must be automated and mechanized as much as possible (editorial)
Prospects for the expansion of the wire-broadcast and television reception network, by B. A. Kuybyshev
Horn-parabolic antennas for radio-relay communications links using "Vesna" equipment, by A. A. Metrikin and V. K. Paramonov
Measurement of signal noise ratio in television, by M. I. Krivosheev
Long-line communications with transistorized repeaters, by Yu. D. Farber and E. M. Shlomovich
Lightweight porous aggregates for concrete and methods for preparing them, by Z. L. Ruvinskii
A duplex instrument for short lines, by G. A. Shchekin and A. V. Pavlov
Experience in introducing semiautomatic equipment at the Tambov MTS (interurban telephone exchange) by B. G. Nalbandyan
The rate of mechanization and automation of the production processes in postal communications, by I. A. Lamm
Automation of radio-communications, radiobroadcasting and television facilities
Communications as a branch of material production, by I. A. Podgorodetskii
The instructive experience of communications workers in Latvia, by S. G. Vultakh and L. Ya. Rivin
The role of interdistrict inspectors in improving rural communications, by K. I. Lashkin
Organization for delivery of first-class and second-class mail in Leningrad, by V. I. Korneev
N. F. Kul'kova's method of servicing coin-operated telephones, by I. F. Tagunov
Communications workers in the service of the revolution, by I. Ya. Kalinin
The development of communications and technology in the Chinese Peoples Republic, by P. A. Frolov

HERALD OF COMMUNICATIONS, 1958, NO. 12(225). 20 Oct 61 [146]p. JPRS: 7017.
Order from OTS or SLA $11.00 62-13032

Trans. of Vestnik Svyazi (USSR) 1958 [v. 18] no. 12(225) including covers.

DESCRIPTORS: *Communication systems, *Communications theory, *Communication equipment, Periodicals, Automation, Economics, Operation, Television receivers, Electric bridges, Electron tubes, Voltmeters, Sound reproduction systems, Radio communication systems, Radio broadcasting, Rural areas, Safety, Television communication systems, Telegraph transmitters, Semiconductors, Coaxial cables, Corrosion, Remote control systems, Telephone communication systems, Telephone poles, Installation, Postal systems, Personnel, Culture, Inventions

Contents:
Future development of radio communications, radiobroadcast, and television facilities (editorial)
Discussion of the theses of the report by Comrade N. S. Khrushchev at the 21st Party Congress
A semiconductor compensator for extraneous EMF, by A. A. Arakelov and G. M. Mikirtichan
Transistorized DC voltage multipliers, by Yu. K. Zakharov and P. I. Loktev
Influence of corrosion damage to cable armor on value of screening factor, by K. K. Nikol'skiy
Pressing problems in the standardization of the performance indices of wire-broadcasting channels
PTS: 3 mobile television station, by A. V. Kiyashko
Concerning remote control and remote signaling on cable trunks, by V. V. Gorokhov
Widespread automation of rural communications facilities, by D. A. Ivanov
Installation and operation of UPTS equipment on intradistrict telephone service networks, by B. S. Garash and N. G. Krasovskii
A manual pole setter for installation of poles in construction and repair of communications lines, by Yu. A. Ivanov
Leaders in socialist competition
Communications production cost analysis, by S. R. Esikov and E. P. Smorchkova
Skilled specialists for district communications offices, by V. I. Osipova
How we serve the public with telephone facilities, by R. M. Likhtin
Public inspection of postal communications facilities in Ryazan' oblast, by N. I. Shepelev
Improving the operational stability of line-cable communications installations, by B. S. Zakharov and V. A. Shishkin
Experience-sharing in teaching the rules for accident prevention, by G. N. Shakhnabatyan
Raising the cultural and political levels of knowledge of communications workers, by S. G. Volkov and L. Ya. Yakovlev
The work of the permanent production conference in communications enterprises
Rationalizer activity at the Karelian radio center, by S. S. Klempner
Results of the 1957-58 competition for best suggestions in the field of radiofication and VRS, by Ya. Rozenberg and V. P. Limov
Reequipment of the ST-35 and STA instrument desks, by A. V. Fedorychev

HERALD OF COMMUNICATIONS, 1961 [VOL. 21] NO. 7[256]. 18 Oct 61 [159]p. JPRS: 10704.
Order from OTS or SLA $11.50 62-13223

Trans. of Vestnik Svyazi (USSR) 1961 [v. 21] no. 7[256] including covers.

DESCRIPTORS: *Communication systems, *Communication equipment, *Communications theory, Periodicals Automation, Operation, Amplifiers, Television receivers, Coaxial cables, Instrumentation, Sound reproduction systems, Postal systems, Personnel, Tests Space flight, Electronics, Telephone communication systems, Adapters, Radio broadcasting, Telemeter systems, Telegraph systems.

Contents:
Latest communication equipment
Air mail service must be developed by all possible means (editorial)
To the 22nd Congress of the CPSU; Our labor, our creativity
The plenum of Moscow city Committee of the Trade Union on the Competition in Honor of the Congress
To welcome the Party Congress with personal gifts of labor
The first space flight and radio electronics, by V. I. Siforov
At the collegium of the USSR Ministry of Communications
Unitized crossbar automatic telephone offices of 40-80 lines capacity, by B. S. Livshits
A panoramic adapter for a receiver with EO-7 oscillograph, by A. Ya. Stukman
Telemetering in wire broadcasting systems, by V. A. Nyurenberg
Advantages and disadvantages of the new AVK-1 apparatus for the wire-broadcasting output commutation, by A. A. Vdovichenko
Postal regulations to be placed on the level of new tasks, by L. Ya. Dobychina
An important resource for raising mail carriers' labor productivity, by V. I. Korneev
Servicing of radio and television receiving network must be improved, by A. V. Radzievskii
Radio broadcasting into every home, by Z. Z. Satdinov and I. M. Marchenko
What is hindering the improvement in the operation of city telephone exchanges, by A. G. Serikov
Khabarovsk telegraph office is striving for the title "Communist-Labor Enterprise", by I. A. Shestopal
On the air mail routes, by S. G. Volkov
Radio amateurs; to national economy
Enviable old age
When will improved machinery be at last put into use in the construction of pole lines?, by D. V Krutskikh and V. I. Anokhin

SOCIAL SCIENCES

Charkin, P.
MUSEUM OF THE PETROLEUM REFINING PLANT IMENI D. I. MENDELEEV. 23 Oct 61 [5]p. JPRS: 10788.
Order from OTS or SLA $1.10 62-13248

Trans. of Izvestiya Vysshikh Uchebnykh Zavedenii. Neft' i Gaz (USSR) 1961 [v. 4] no. 2, p. 18 and 24.

DESCRIPTORS: *Museums, *Petroleum industry

A museum has been erected in the House of Culture in the factory imeni D. I. Mendeleyev in the city of Yaroslavl'. (Extract)

BOOK REVIEWS

The following book reviews can be ordered by number from OTS or SLA for $1.10 each. Each review includes, in addition to the material shown, a detailed statement of the coverage of the book and detailed table of contents.

BR-SOV/5561
Ryzhkov, Dmitriy Ivanovich
VIBRATIONS IN METAL CUTTING AND THEIR ELIMINATION(Vibratsii pri rezanii metallov i metody ikh ustraneniya) Moscow, Mashgiz, 1961. 171p. Errata slip inserted. 10,000 copies printed. 2p.

BR-SOV/5562
Afanas'yev, Pavel Agafonovich
UTILIZATION OF PLASTIC MATERIALS IN MACHINE BUILDING(Primeneniye plasticheskikh mass v mashinostroyenii) Moscow, Mashgiz, 1961. 196p. Errata slip inserted. 18,000 copies printed. 2p.

BR-SOV/5563
Yegorov, Viktor Alekseyevich
OPTICAL AND STYLUS INSTRUMENTS FOR DETERMINING SURFACE ROUGHNESS(Opticheskiye i shchupovyye pribory dlya opredeleniya sherokhovatosti poverkhnosti) Moscow, Mashgiz, 1961. 155p. 6,500 copies printed. 2p.

BR-SOV/5564
Rossoshinskiy, Aleksey Anatol'yevich
METALLOGRAPHY OF WELDS (Metallografiya svarnykh shvov) Moscow, Mashgiz, 1961. 205p. 6,500 copies printed. 1p.

BR-SOV/5565
Belorussov, Nikolay Ivanovich, and Yelena Georgiyevna Fedoseyeva
PLASTIC-INSULATED CABLES, WIRES, AND CORDS (Kabeli, provoda i shnury s plastmassovoy izolyatsiyey) Moscow, Gosenergoizdat, 1960. 319p. 13,000 copies printed. 3p.

BR-SOV/5566
Zorev, N. N., and G. S. Kreymer
HIGH-PRODUCTIVITY MACHINING OF STEEL WITH HARD-ALLOY TOOLS IN INTERMITTENT CUTTING (Vysokoproizvoditel'naya obrabotka stali tverdosplavnymi reztsami pri preryvistom rezanii) Moscow, Mashgiz, 1961. 78p. 6,500 copies printed. 1p.

BR-SOV/5567
Preobrazhenskiy, Aleksey Yuvenaliyevich
SECRETS OF THE AIR OCEAN (Tayny vozdushnogo okeana) Moscow, Izd-vo "Znaniye", 1961. 36p. (Series: Vsesoyuznoye obshchestvo po rasprostraneniyu politicheskikh i nauchnykh znaniy. Seriya IV, 1961: Tekhnika, no. 8) 48,000 copies printed. 1p.

BR-SOV/5568
Didenko, Konstantin Ivanovich, and Zhemio Aleksandrovna Guseva
NEW MONITORING AND REGULATING EQUIPMENT (Novaya apparatura kontrolya i regulirovaniya) Moscow, Mashgiz, 1961. 22p. Errata slip inserted. 12,000 copies printed. 3p.

BR-SOV/5569
Osipov, Konstantin Dmitriyevich, and Vsevolod Vladimirovich Pasynkov
MANUAL ON RADIO MEASURING DEVICES. PT. 2: FREQUENCY-MEASURING DEVICES AND MEASURING GENERATORS (Spravochnik po radioizmeritel'nym priboram. ch. 2: Pribory dlya izmereniya chastoty i izmeritel'nyye generatory) Moscow, Izd-vo "Sovetskoye radio," 1960. 203p. No. of copies printed not given. 2p.

BR-SOV/5570
Akademiya nauk SSSR. Astronomicheskiy sovet.
ACADEMY OF SCIENCES OF THE USSR. ASTRONOMICAL COUNCIL. BULLETIN OF THE STATIONS FOR OPTICAL OBSERVATION OF ARTIFICIAL EARTH SATELLITES. NO. 1 (11) (Byulleten' stantsiy opticheskogo nablyudeniya iskusstvennykh sputnikov Zemli. No. 1(11)) Moscow, 1960. 22p. 500 copies printed. 2p.

BR-SOV/5571
Akademiya nauk SSSR. Astronomicheskiy sovet.
ACADEMY OF SCIENCES OF THE USSR. ASTRONOMICAL COUNCIL. BULLETIN OF THE STATIONS FOR OPTICAL OBSERVATION OF ARTIFICIAL EARTH SATELLITES: NO. 2 (12) (Byulleten' stantsiy opticheskogo nablyudeniya iskusstvennykh sputnikov Zemli: no. 2(12)) Moscow, 1960. 30p. 500 copies printed. 1p.

BR-SOV/5572
Akademiya nauk SSSR. Astronomicheskiy sovet.
ACADEMY OF SCIENCES OF THE USSR. ASTRONOMIC COUNCIL. BULLETIN OF THE STATIONS FOR OPTICAL OBSERVATION OF ARTIFICIAL EARTH SATELLITES. NO. 4 (14) (Byulleten' stantsiy opticheskogo nablyudeniya iskusstvennykh sputnikov Zemli. No. 4(14)) Moscow, 1960. 26p. 500 copies printed. 2p.

BR-SOV/5573
Akademiya nauk SSSR. Astronomicheskiy sovet.
ACADEMY OF SCIENCES OF THE USSR. ASTRONOMIC COUNCIL. BULLETIN OF THE STATIONS FOR OPTICAL OBSERVATION OF ARTIFICIAL EARTH SATELLITES. NO. 5 (15) (Byulleten'stantsiy opticheskogo nablyudeniya iskusstvennykh sputnikov Zemli. No. 5 (15)) Moscow, 1960. 17p. 500 copies printed. 2p.

BR-SOV/5574
Akademiya nauk SSSR. Astronomicheskiy sovet.
BULLETIN OF THE STATIONS FOR OPTICAL OBSERVATION OF ARTIFICIAL EARTH SATELLITES. NO. 7 (17) (Byulleten' stantsiy opticheskogo nablyudeniya iskusstvennykh sputnikov Zemli. No. 7 (17)) Moscow, 1960. 500 copies printed. 1p.

BR-SOV/5575
Akademiya nauk SSSR. Astronomicheskiy sovet.
BULLETIN OF THE STATIONS FOR OPTICAL OBSERVATION OF ARTIFICIAL EARTH SATELLITES. NO. 6

(Byulleten' stantsiy opticheskogo nablyudeniya iskusstvennykh sputnikov Zemli, no. 6) Moscow, 1959. 23p. 500 copies printed. 3p.

BR-SOV/5576
Akademiya nauk SSSR. Astronomicheskiy sovet.
BULLETIN OF THE STATIONS FOR OPTICAL OBSERVATIONS OF ARTIFICIAL EARTH SATELLITES. NO. 8 (18) (Byulleten; stantsiy opticheskogo nablyudeniya iskusstvennykh sputnikov Zemli. No. 8 (18)) Moscow, 1960. 23p. 500 copies printed. 1p.

BR-SOV/5577
Akademiya nauk SSSR. Astronomicheskiy sovet.
BULLETIN OF THE STATIONS FOR OPTICAL OBSERVATION OF ARTIFICIAL EARTH SATELLITES. NO. 10 (Byulleten' stantsiy opticheskogo nablyudeniya iskusstvennykh sputnikov Zemli. No. 10) Moscow, 1959. 30p. 500 copies printed. 2p.

BR-SOV/5578
Lebedinskiy, Andrey Vladimirovich, and Zinaida Nikolayevna Nakhil'nitskaya
EFFECTS OF IONIZING RADIATION ON THE NERVOUS SYSTEM (Vliyaniye ioniziruyushchikh izlucheniy na nervnuyu sistemu) Moscow, Atomizdat, 1960. 186p. 5,000 copies printed. 2p.

BR-SOV/5580
Golubev, T. M., and I. P. Tartakovskiy, eds.
AUTOMATION OF COLD [METAL] STAMPING PRODUCTION (Avtomatizatsiya kholodnoshtampovochnogo proizvodstva) Moscow, Mashgiz, 1961. 282p. 6,000 copies printed. 2p.

BR-SOV/5581
Moscow. Dom nauchno-tekhnicheskoy propagandy.
HIGHLY PRODUCTIVE CUTTING TOOLS; COLLECTION OF ARTICLES (Vysokoproizvoditel'nyy rezhushchiy instrument [sbornik]) Moscow, Mashgiz, 1961. 354p. Errata slip inserted. 10,000 copies printed. 3p.

BR-SOV/5582
Vasil'yev, Rostislav Romanovich, and Galina Alekseyevna Shastova
TRANSMISSION OF TELEMECHANICAL INFORMATION (Peredacha telemekhanicheskoy informatsii) Moscow, Gosenergoizdat, 1960. 143p. Errata slip inserted. (Series: Biblioteka po avtomatike, vyp. 19) 15,000 copies printed. 2p.

BR-SOV/5583
Podkletnov, Ye. N., ed.
ENAMELS AND ENAMELING PROCESSES (Emal' i protsessy emalirovaniya) Moscow, Mashgiz, 1961. 113p. 4,000 copies printed. 4p.

BR-SOV/5584
Goranskiy, Georgiy Konstantinovich
RATIONAL USE OF METAL-CUTTING MACHINE TOOLS (Ratsional'noye ispol'zovaniye metallorezhushchikh stankov) Minsk, Gosizdat BSSR, 1960. 226p. 3,000 copies printed. 3p.

BR-SOV/5585
Zaygerov, Iosif Borisovich
RECLAMATION OF USED MIXTURES IN FOUNDING: CONSTRUCTION AND DESIGN OF PNEUMATIC RECLAIMERS (Regeneratsiya otrabotannykh smesey v liteynom proizvodstve konstruktsiya i raschet pnevmaticheskikh regeneratov) Moscow, Mashgiz, 1961. 181p. Errata slip inserted. 3p.

BR-SOV/5586
Gerasimov, Sergey Mikhaylovich, and others.
DESIGN OF SEMICONDUCTOR AMPLIFIERS AND GENERATORS (Raschet poluprovodnikovykh usiliteley i generatorov) 2d. ed., rev. and enl. Kiyev, Gostekhizdat UkrSSR, 1961. 430p. 25,000 copies printed. 4p.

BR-SOV/5587
Brodskiy, Arkadiy Yakovlevich
WELDING OF CONCRETE REINFORCEMENTS (Svarka armatury zhelezobetonnykh konstruktsiy) Moscow, 1961. 378p. Errata slip inserted. 8,000 copies printed. 5p.

BR-SOV/5588
Rasizade, Yasir Magomed Ogly, and Seyfulla Guseyn Ogly Kurbanov
HYDRAULIC FRACTURE OF THE STRATUM AND COMPLICATIONS DURING WELL DRILLING (Gidravlicheskiy razryv plasta i voprosy oslozhneniy pri burenii skvazhin) Baku, Azerneftneshr, 1960. 100p. Errata slip inserted. 2,000 copies printed. 2p.

BR-SOV/5589
Pilyankevich, Aleksandr Nikolayevich
PRACTICE OF ELECTRONIC MICROSCOPY: METHODS OF [SPECIMEN] PREPARATION (Praktika elektronnoy mikroskopii: metody preparirovaniya) Moscow, Mashgiz, 1961. 175p. Errata slip inserted. 5,500 copies printed. 2p.

BR-SOV/5590
Konferentsiya po poverkhnostnym silam. Moscow, 1960.
STUDIES IN THE FIELD OF SURFACE FORCES; COLLECTION OF REPORTS OF THE CONFERENCE ON SURFACE FORCES, HELD IN APRIL 1960 (Issledovaniya v oblasti poverkhnostnykh sil; sbornik dokladov na konferentsii po poverkhnostnym silam, aprel' 1960 g.) Moscow, Izd-vo AN SSSR, 1961. 231p. Errata printed on the inside of back cover. 2500 copies printed. 4p.

BR-SOV/5591
Vladimirov, V. S.
MATHEMATICAL PROBLEMS IN THE ONE-VELOCITY PARTICLE TRANSPORT THEORY (Matematicheskiye zadachi odnoskorostnoy teorii perenosa chastits) Moscow, Izd-vo AN SSSR, 1961. 157p. (Series: Akademiya nauk SSSR. Matematicheskiy institut. Trudy, t. 61) 3,000 copies printed. 2p.

BR-SOV/5592
Vsesoyuznoye soveshchaniye po vnedreniyu radioaktivnykh izotopov i yadernykh izlucheniy v narodnom khozyaystve SSSR. Riga, 1960.
RADIOACTIVE ISOTOPES AND NUCLEAR RADIATION IN THE NATIONAL ECONOMY OF THE USSR; TRANSACTIONS ON THE SYMPOSIUM HELD IN RIGA, APRIL 12 - 16, 1960; IN 4 VOLUMES. V. 4: PROSPECTING, SURVEYING, AND MINING OF MINERAL DEPOSITS (Radioaktivnyye izotopy i yadernyye izlucheniya v narodnom khozyaystve SSSR; trudy Vsesoyuznogo soveshchaniya 12 - 16 aprelya 1960 g. g. Riga, v. 4 tomakh. t. 4: Poiski, razvedka i razrabotka poleznykh iskopayemykh) Moscow, Gostoptekhizdat, 1961. 284p. 3,640 copies printed. 5p.

BR-SOV/5593
Pogorelov, Aleksey Vasil'yevich
ON THE THEORY OF CONVEX ELASTIC SHELLS IN SUPERCRITICAL PHASE (K teorii vypuklykh uprugikh obobochek v zakriticheskoy stadii) Khar'kov, Izd-vo Khar'kovskogo univ., 1960. 78p. 3,000 copies printed. 3p.

BR-SOV/5594
Pochtennyy, Ye. K.
INTRODUCTION TO THE DISLOCATION THEORY OF DEFORMATION OF MACHINE PARTS (Vvedeniye v dislokatsionnuyu teoriyu deformatsii detaley mashin) Minsk, Redizdat otdel BPI im. I. V. Stalina, 1960. 98p. 2,000 copies printed. 2p.

BR-SOV/5595
Khomutov, Aron Iosifovich
ALLOYED STEELS AND ALLOYS (Legirovannyye stali i splavy) Moscow, Izd-vo "Znaniye," 1961. 46p. (Series: Vsesoyuznoye obshchestvo po rasprostraneniyu politicheskikh i nauchnykh znaniy. Seriya IV, 1961. Tekhnika, no. 10) 43,000 copies printed. 1p.

BR-SOV/5596
Neyfel'd, I. Ye., and others.
QUALITY CONTROL IN FIELD WELDING (Kontrol' kachestva svarki na stroitel'stve) Moscow, Gostroyizdat, 1960. 163p. 8,000 copies printed. 3p.

BR-SOV/5597
Kondrat'yev, Viktor Nikolayevich
FREE RADICALS, THE ACTIVE FORM OF SUBSTANCE (Svobodnyye radikaly - aktivnaya forma veshchestva) Moscow, Izd-vo AN SSSR, 1960. 54p. Errata printed on the inside of back cover. 20,000 copies printed. 1p.

BR-SOV/5598
Yeremeyeva, N. M.
MACHINING HOLES IN GRAY CAST-IRON PARTS; WAYS TO REDUCE THE CYCLE TIME AND IMPROVE THE QUALITY OF DRILLED AND REAMED HOLES (Obrabotka otverstiy v detalyakh iz serogo chuguna; puti snizheniya osnovnogo tekhnologicheskogo vremeni i uluchsheniya kachestva otverstiy pri sverlenii, zenkerovanii i razvertyvanii serogo chuguna) Moscow, Mashgiz, 1961. 126p. Errata slip inserted. 4,000 copies printed. 3p.

BR-SOV/5599
Baranovskiy, Mikhail Adamovich
MECHANIZATION AND AUTOMATION OF STAMPING OPERATIONS (Mekhanizatsiya i avtomatizatsiya shtampovochnogo proizvodstva) Minsk, Gosizdat BSSR, 1960. 233p. 5,000 copies printed. 3p.

BR-SOV/5600
Morozov, Aleksandr Nikolayevich
THE MODERN OPEN-HEARTH PROCESS (Sovremennyy martenovskiy protsess) Sverdlovsk, Metallurgizdat, 1961. 600p. Errata slip inserted. 6,000 copies printed. 5p.

BR-SOV/5602
Tsinzerling, Yekaterina Vladimirovna
ARTIFICIAL TWINNING IN QUARTZ (Iskusstvennoye dvoynikovaniye kvartsa) Moscow, Izd-vo AN SSSR, 1961. 159p. Errata slip inserted. 1,800 copies printed. 2p.

BR-SOV/5605
Lyubovich, L. A., and Yu. S. Ryabtsev
TRANSISTORIZED CURRENT-SWITCHING COMPONENTS OF HIGH-SPEED DIGITAL COMPUTERS(Elementy bystrodeystvuyushchey vychislitel'noy mashiny na tranzistornykh pereklyuchatelyakh toka) Moscow, 1960. 59p. 600 copies printed. (Series: Elektronnyye vychislitel'nyye mashiny) 1p.

BR-SOV/5606
Petrov, Aleksandr Dmitriyevich, and others.
SYNTHESIS OF ORGANOSILICON MONOMERS (Sintez kremiyorganicheskikh monomerov) Moscow, Izd-vo AN SSSR, 1961. 550p. Errata slip inserted. 4,500 copies printed. 6p.

BR-SOV/5608
Katskova, O. N., and others.
COMPUTATION PRACTICE OF HORIZONTAL AND AXIALLY SYMMETRIC SUPERSONIC GAS FLOW BY THE METHOD OF CHARACTERISTICS (Opyt rascheta ploskikh i osesimmetrichnykh sverkhzvukovykh techeniy gaza metodom kharakteristik) Moscow, Vychislitel'nyy tsentr AN SSSR, 1961. 57p. 1,100 copies printed. 1p.

BR-SOV/5609
Deyneko, Viktor Filippovich
PROJECTIVE FUNDAMENTALS OF AERIAL PHOTOGRAPHIC GEODESY (Proyektivnyye osnovy aerofotogeodezii) Moscow, Izd-vo geodezicheskoy lit-ry, 1960. 48p. Errata slip inserted. 1,000 copies printed. 2p.

BR-SOV/5618
Gnedenko, Boris Vladimirovich, and others.
PROGRAMMING ELEMENTS (Elementy programmirovaniya) Moscow, Fizmatgiz, 1961. 348p. 25,000 copies printed. 2p.

BR-SOV/5619
Krylov, Viktor Aleksandrovich, and Agniya Petrovna Solovey
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